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THE

MINING WORLD INDEX

of Current Literature

VOL. VIII LAST HALF YEAR 1915

By GEO. E. SISLEY
Associate Editor
Mining and Engineering World

An International Bibliography of Mining and the Mining Sciences Compiled and Revised Semi-Annually from the Index of the World's Current Literature Appearing Weekly in "Mining and Engineering World"

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Preface

But few changes have been made in this volume of Mining World Index of Current Literature, and these only of a minor nature. The increasing importance of flotation has brought out considerable matter on this present-day development and all articles treating of the subject have been placed under a separate head. Several other departments have undergone a closer classification, all changes being made with the one object of making the volume a handy reference book.

As in previous volumes the world's literature on mining, metallurgy and kindred subjects appearing in periodical magazines published in America, Europe, Africa and Australia, have been arranged in classified form. These articles cover mining, engineering, metallurgy, geology, mineralogy, etc. There is also included papers read before institutes and affiliated engineering and technical societies, as well as reports of Federal and State Geological Surveys and Mining Bureaus at home and abroad and new books. By the system of cross-indexing adopted what is wanted on any mining or affiliated subject is readily found. A brief digest of all articles is given so that a general idea of the article may be obtained. Where more than one author occurs the first-named appears in alphabetical arrangement; the other or others will be found by referring to the authors' index.

In the search for some particular article covering a certain subject it should be remembered that when reference of any importance is made in that article to more than one subject, the article will be indexed under the different subjects. Careful thought is given to the arrangement of subjects and the classifying of same, and the author would be glad to receive any criticism or suggestion, the adoption of which would make the book of more value to the busy man.

Contents

PART I.—GEOLOGY AND MINERALOGY.

CHAPTER I.

Geology, Ore Genesis, Mineralogy and Petrography 1

PART II.—ORES AND MINERAL PRODUCTS.

CHAPTER II.

Gold, Silver, Platinum 16

CHAPTER III.

Copper 34

CHAPTER IV.

Lead, Zinc, Cadmium 44

CHAPTER V.

Iron and Steel 54

CHAPTER VI.

Alloys, Antimony, Manganese, Molybdenum, Tungsten, Etc..... 68

CHAPTER VII.

Tin, Nickel, Cobalt, Aluminum 73

CHAPTER VIII.

Miscellaneous Metals and Ores..... 76

CHAPTER IX.

Fuels and By-Products..... 79

CHAPTER X.

Petroleum, Natural Gas, Etc..... 98

CHAPTER XI.

Structurals and Ceramics 104

CHAPTER XII.

Other Non-Metals 109

PART III.—TECHNOLOGY.

CHAPTER XIII.

Mines and Mining (a).....115

CHAPTER XIV.

Mines and Mining (b).....140

CHAPTER XV.

Mines and Mining (c).....150

CHAPTER XVI.

Mill and Milling 160

CHAPTER XVII.

Chemistry and Assaying 172

CHAPTER XVIII.

Metallurgy 179

CHAPTER XIX.

Power and Machinery 191

PART IV.—MISCELLANEOUS.

General 203

Subject Index Page xxi.

Publications Indexed

INCLUDING PERIODICALS AND BOOKS; TRANSACTIONS, BULLETINS, ETC., OF SCHOOLS, SOCIETIES AND GOVERNMENT BUREAUS.

A

Acetylene Journal.
African World.
Alabama Geological Survey.
Alaska & Northwest Mining Journal.
All-Alaska Review.
Allianza, Mexico.
American Ceramic Society.
American Chemical Society.
American Electrochemical Society.
American Fertilizer.
American Foundrymen's Association.
American Industries.
American Institute of Chemical Engineers.
American Institute of Electrical Engineers.
American Institute of Metals.
American Institute of Mining Engineers.
American Iron & Steel Institute.
American Journal of Science.
American Metal Society.
American Mining Congress.
American Museum of Safety.
American Peat Society.
American Portland Cement Manufacturers.
American Railway Engineering Association.
American Society of Civil Engineers.
American Society of Engineering Contractors.
American Society of Mechanical Engineers.
American Society of Naval Engineers.
American Wood Preservers' Association.
Annales de Mines, France.
Anode.
Argentine Sociedad Cientifica.
Arizona Mine Inspector.
Arizona State Bureau of Mines.
Arizona State Geological Survey.
Arkansas Bureau of Mines.
Arkansas Geological Survey.
Association of Engineering Societies.
Association of Mining Electrical Engineers, England.
Association of Railway Electrical Engineers.
Atti del Colegro degli Ingenerio Ed Architetti.
Australian Coal & Iron Trade Review, Sydney.
Australasian Institute of Mining Engineers.
Australian Mining Standard, Melbourne.

B

Belgium Annales des Mines.
Berg, Hütten & Salinenwesen in preusischen Staate, Germany.
Berg- und Huttenwesen, Germany.
Berg- und Hüttenmännische Rundschau, Kattowitz, Germany.
Berg und Hüttenm, Jahrb, Leoben-Pribram.
Bergbau, Germany.
Bergrecht, Germany.
Bergwerks-Zeitung, Germany.
Bergwerkschaftliche Mitteilungen, Germany.
Birmingham Metallurgical Society, England.
Bitumen, Germany.
Black Diamond.
Bolivia Geological & Geographical Boletin.
Braunkohle, Germany.
Brick & Clay Record.
British Columbia Bureau of Mines.
British Columbia Mining Exchange & Engineering News, B. C.
British Guiana Institute of Mines and Forests.
British Institute of Metals.

C

Cairo Scientific Society.
California Derrick.
California Miners' Association.
California State Mining Bureau.
Canada Department of Mines.
Canada Geological Survey.
Canadian Engineer.
Canadian Mining Institute.
Canadian Mining Journal.
Cassier's Magazine.
Cement.
Centralblatt der Hütten & Walzwerke, Berlin, Germany.
Chemical Engineer.
Chemical Metallurgical & Mining Society of South Africa.
Chemiker-Zeitung, Germany.
Chemiker & Techniker-Zeitung, Austria.
Chemist-Analyst.
Chile Institute de Ingenieros.
Cleveland Engineering Society.
Coal Age.
Coal Mining Institute of America.
Coal Trade Bulletin.
Coal & Coke Operator.
Colliery Guardian, London.
Colorado Geological Survey.
Colorado School of Mines.
Colorado Scientific Society.
Colorado State Bureau of Mines.
Colorado University.
Colombia Department de Antioquia.
Columbia School of Mines Quarterly.
Compressed Air Magazine.
Concrete-Cement Age.
Connecticut State Geological & Natural History Survey.
Cornwall Mining Association and Institute, England.
Cuerpo de Ingenieros de Minas del Peru, Peru.

D

Der Erzbergbau, Germany.
Deutsche Technik, Germany.
Die Fördertechnik, Germany.
Domestic Engineering.

E

Economic Geology.
Edinburgh Geological Society, Scotland.
Eisen Zeitung, Germany.
El Economista Mexicana, Mexico.
El Petrolero Mexicana, Mexico.
Electrical Engineer, London.
Electrical Review, London.
Electrical Review & Western Electrician.
Electrician, London.
Elektrochemie, Germany.
Electrotechnik & Maschinenbau, Austria.
Elektroschemische Zeitschrift, Germany.
Engineering Association of New South Wales, Australia.
Engineering, London.
Engineering Magazine.
Engineering Review, London.
Engineering & Contracting.

Engineering & Mining Journal.
Engineers' Club.
Enginers' Society of Eastern Pennsylvania.
Engineers' Society of Western Pennsylvania.
English Ceramic Society, England.
Excavating Engineer.

F

Faraday Society, London.
Federated Malay States Mines Report.
Fer et Acier, France.
Ferrum, Aachen, Germany.
Florida State Geological Survey.
Fördertechnik, Germany.
Foundry.
Franklin Institute.
Fuel Oil Journal.

G

General Electric Review.
Geological Society of America.
Geological Society of Tokyo, Japan.
Geological Society of Washington, D. C.
Georgia Geological Survey.
Gesamte Schiss & Sprengstoffwesen, Germany.
Giesserei Zeitung, Germany.
Glückauf, Germany.
Great Britain Geological Survey.

I

Idaho State Inspector of Mines.
Ideal Power.
Illinois Bureau of Labor Statistics.
Illinois State Geological Survey.
Illinois State Mining Board.
Illinois Miners' Mechanics Institute.
Illinois University.
Imperial Institute.
India Geological Survey.
India Mining & Geological Institute.
Indian & Eastern Engineer.
Indiana Department of Geology & Natural Resources.
Indust. Chimica, Minerar. e Metallurg., Italy.
Industrial Advocate, Nova Scotia.
Industrial Engineering & Engineering Digest.
Ingot.
Ingeneria y Contratista.
Ingeneria, Spain.
Institute of Engineers & Ship Builders, Scotland.
Institute of Marine Engineers, England.
Institution of Mining Engineers, London.
Institution of Mining & Metallurgy, London.
International Congress for Radiology & Electrology.
International Railway Fuel Association.
International Institute of Technical Bibliography.
Internationalen Vereines der Bohringenieure & Bohrtechniker, Austria.
Iowa Engineer.
Iowa Geological Survey.
Iowa Mine Inspectors.
Iowa State College Engineering Experiment Station.
Iowa University.
Iron Age.
Iron Trade Review.
Iron & Coal Trades Review, London.
Iron & Steel Institute, London.

J

Jern Kontorets Annaler, Sweden.
Journal du Four Electrique et de l'Electrolyse, France.
Journal du Petrole, France.
Journal of Electricity, Power & Gas.
Journal of Geology.
Journal of Industrial & Engineering Chemistry.

K

Kali, Erz & Kohle, Germany.
Kali, Halle, Germany.
Kansas Mine Inspector.
Kansas University Geological Survey.
Kentucky Department of Mines.
Kentucky Geological Survey.
Kentucky Mining Institute.
Kentucky University.
Kohle & Erz, Germany.
Kohleninteressent, Germany.
Kunstdünger Industrie, Germany.

L

La Metallurgie du Nord, France.
Lackawanna Chemical Society.
Lake Superior Mining Institute.
Le Pétrole, France.
Le Phosphate, France.
Levant Trade Review, Turkey.
Liverpool Geological Association, England.
L'Opinion Financiere, France.
Los Angeles Chamber of Mines & Oil.
Louisiana Geological Survey.

M

Madrid Cientifico, Spain.
Malayan Tin & Rubber Journal, F. M. S.
Manchester Association of Engineers, England.
Manchester Mining & Geological Society, England.
Marine Review.
Maryland Geological Survey.
Maryland Mine Inspector.
Mechanical World, England.
Mensuel de L'Association Amicale.
Metal und Erz, Halle, Germany.
Metaux et Alliages, France.
Metallurgia Italiara, Italy.
Metallurgical & Chemical Engineering.
Metallurgie & Construction Mechanique, France.
Metallurgie, Germany.
Mexicana Sociedad Geologica.
Mexican Institute of Mining & Metallurgy, Mexico.
Mexican Mining Journal.
Michigan Geological Survey.
Midland Institute of Mining, Civil & Mechanical Engineers, England.
Mine Inspectors' Institute of U. S.
Mine, Quarry & Derrick.
Mining Engineering, London.
Mining Engineering & Electrical Record, B. C.
Mining Institute of Scotland.
Mining Journal, London.
Mining Magazine, London.
Mining, Oil & Engineering Review.
Mining Science.
Mining Society of Nova Scotia.
Mining World & Engineering Record, London.
Mining & Engineering Review, Australia.
Mining & Engineering World.
Mining & Geological Institute of India.
Mining & Metallurgical Society of America.
Mining & Oil Bulletin.
Mining & Scientific Press.
Minnesota Geological & Natural History Survey.
Minnesota School of Mines.
Minnesota University.
Mississippi Geological Survey.

Missouri Bureau of Geology and Mines.
Missouri Geological Survey.
Missouri School of Mines.
Mois Minier et Metallurgique, France.
Montan-Zeitung für Oesterreich-Ungarn und die Balkanländer, Austria.
Montana Bureau of Agriculture, Labor & Industry.
Montana Inspector of Mines.
Montanistische Rundschau, Germany.
Municipal Engineer.

N

National Academy of Sciences.
National Association of Chemical Industry.
National Association of Colliery Managers, London.
National Association of Stationary Engineers.
National Geographic Magazine.
National Lime Manufacturers' Association.
Natural Gas Journal.
Nevada Inspector of Mines.
Nevada University.
New Jersey Geological Survey.
New South Wales Engineering Association.
New York Geological Survey.
New Zealand Geological Survey.
New Zealand Institute.
North Carolina Geological Survey.
North of England Institute of Mining & Mechanical Engineers.
North Staffordshire Institute of Mining & Mechanical Engineers.
Nova Scotia Mining Society.

O

Oesterreichische Zeischrift für Berg- und Huttenwesen, Vienna, Austria.
Ohio Geological Survey.
Oil Age.
Oil & Gas Journal.
Oil & Mining Bulletin.
Oildom.
Oklahoma Geological Survey.
Ontario Bureau of Mines.
Oregon Mineral Resources.
Oregon University.

P

Pahasapa Quarterly.
Pan American Union.
Penn State Mining Quarterly.
Pennsylvania Mines Department.
Pennsylvania Topographic & Geologic Survey.
Peru Engineer of Mines.
Peru Today, Lima.
Pétrole, France.
Petroleum, Germany.
Petroleum World, London.
Pfalz-Saarbrücker Bezirksvereins Deutscher Ingenieure, Germany.
Philadelphia Engineers' Club.
Philippine Journal of Science, Manila.
Pittsburgh University.
Popular Mechanics.
Popular Science Monthly.
Power.
Practical Electricity & Engineering.
Practical Engineer.
Praktische Geologie, Germany.

Q

Quebec Bureau of Mines.
Quebec Department of Colonization, Mines & Fisheries.
Queensland Geological Survey.
Queensland Government Mining Journal.

R

Radium.
Rassegna Mineraria Metallurgica e Chimica, Italy.
Reclamation Record.
Resoconti delle Riunioni Association, Italy.
Retail Coalman.
Revista Minera e Industria de Linares, Spain.
Revista Minera Metallurgica y de Ingenieria, Spain.
Revista Petrolera, Mexico.
Revue de Metallurgie, France.
Revue des Matériaux de Construction, France.
Revue d'Electrochimie et d'Electrometallurgie, France.
Revue Industrielle du Centre, France.
Revue Noire, France.
Revue Practique des Industries Metallurgiques, France.
Rhodesia (Southern) Mines Department.
Rhodesian Chamber of Mines, Bulawayo.
Rigasche Industrie, Russia.
Rock Products.
Royal Geological Society of Cornwall, England.
Royal Society of Arts Journal, London.
Royal Society of Canada.

S

Salt Lake Mining Review.
Schiess & Sprengtoffwesen, Germany.
Science & Art of Mining, England.
Science Conspectus.
Sibley Journal of Engineering.
Slate Trade Gazette, England.
Smithsonian Institution.
Société Amicale des Anciens Éléves de l'École des Maitres-Mineurs de Douai, France.
Société Chimique de Belgique, Belgium.
Société des Ingénieures Civils de France.
Society of Arts, London.
Society of the Chemical Industry, London.
South Africa Engineering, London.
South Africa Geological Survey.
South African Association of Engineers.
South African Institute of Electrical Engineers.
South African Mining Journal.
South Australia Department of Mines.
South Carolina Geological Survey.
South Dakota Engineering Society.
South Dakota Geological Survey.
South Dakota Inspector of Mines.
South Dakota School of Mines.
South Staffordshire & Warwickshire Institute of Mining Engineers, England.
South Wales Institute of Engineers, Wales.
Staffordshire Iron & Steel Institute, England.
Stahl und Eisen, Germany.
Steam.
Stone Trade Journal.
Südwestdeutsche Industrie Zeitung, Prussia.
Sydney University Engineering Society.

T

Technische Blätter, Essen-Ruhr, Germany.
Technische Centralanzeiger, Germany.
Tech. du Nord de la France.
Tennessee Department of Mines.
Tennessee Resources.
Tennessee State Geological Survey.
Teniente Topics, Chile.
Texas University.
Texas University Mineral Survey.
Tonindustrie Zeitung, Berlin, Germany.
Transvaal Chamber of Mines, Johannesburg.

U

United States Bureau of Mines.
United States Bureau of Standards.
United States Consular Reports.
United States Department of Commerce and Labor.
United States Geological Survey.
United States National Museum.
Utah Bureau of Immigration, Labor & Statistics.

V

Vancouver, B. C., Chamber of Mines.
Vereines Deutscher Ingenieure, Germany.
Vermont Geological Survey.
Victoria Chamber of Mines, Australia.
Virginia Geological Survey.

W

Washington (D. C.) Academy of Sciences.
Washington Geological Survey.
West Australia Chamber of Mines.
West Australia Geological Survey.
West Australia Institution of Engineers.
West Australian Mining, Building & Engineering Journal, Kalgoorlie.
West of Scotland Iron & Steel Institute.
West Virginia Department of Mines.
West Virginia Geological Survey.
West Virginia Mining Association.
Western Chemist & Metallurgist.
Western Engineering.
Western Society of Engineers.
Wisconsin Engineer.
Wisconsin Geological & Natural History Survey.
Wisconsin University.
Wood Preserving.
Wyoming Geological Survey.

Y

Yale Scientific Monthly.

Z

Zentral Verbandes der Bergbau Betriebsleiter, Bohemia.

Explanations and Abbreviations

The entries show:

(1) The author of the article.

(2) A dash if the name is not apparent.

(3) The title, in italics, of the article or book. Titles in foreign languages are ordinarily followed by a translation or explanation in English.

(4) When the original title is insufficient a brief amplification is added. This addition is in brackets.

(5) The journal in which the article appeared; also the date of issue, and the page on which the article begins.

(6) Approximate number of words. Illustrated articles are indicated by an asterisk (*).

(7) The price. Articles mentioned will be supplied to subscribers of Mining and Engineering World and others at the prices quoted. Two-cent postage stamps will be accepted on orders less than $1. Subscribers will be allowed a discount of 5 cts. if the price of the article exceeds 50 cts.

NOTE.—When there is more than one author to an article, only the first named appears in alphabetical arrangement, the others appearing, however, on the page or pages designated in author's index.

Subjoined is a list of the commoner abbreviations found in this work. They are used chiefly in the names of periodicals, and of associations. The abbreviations will be found easily intelligible at sight, and are what they purport to be—self-explanatory abbreviations, not symbols.

Abst.—Abstract.
Acad.—Academy; Académie; Accademia.
Adv.—Advance.
Afr.—Africa; African.
Akad.—Akademie.
Allgm.—Allgemeine.
Amer.—American.
A. I. M. E.—American Institute Mg. Eng.
Archts.—Architects.
Assn.—Association.
Ber.—Berichte.
Bol.—Boletin; Boletim; Bollettino.
Bull.—Bulletin.
Bur.—Bureau.
Centralbl.—Centralblatt.
C-R.—Compte-Rendu; Resoconti.
Chap.—Chapter.
Chem.—Chemical.
Chemy.—Chemistry.
Coll.—College.
Colly.—Colliery.
Cong.—Congress.
Conv.—Convention.
d.—des (French and German).
Dept.—Department.
Deu.—Deutsche, etc.
Econ.—Economic.
Ed.—Editorial.
Elect.—Electrical.
Engg.—Engineering.
Engr.—Engineer.
Engrs.—Engineers.
Ext.—Extract.
f.—for; für.
Gaz.—Gazette.
Geol.—Geology.
Geolog.—Geological.
Ges.—Gesellschaft.
Govt.—Government.
Hüttenm.—Hüttenmännische.
Ind.—Industrial; Industriel; Industrielle.
Ingr.—Ingenieure, Ingenieros.
Inst.—Institute; Institut; Instituto.
Instn.—Institution.
Intl.—International.
Jahresber.—Jahresbericht.
Jahrb.—Jahrbuch.
Jnl.—Journal.
Mag.—Magazine.
Mech.—Mechanical.
Met.—Metallurgy.
Metl.—Metallurgical.
Mex.—Mexican.
Mfrs.—Manufacturers.
Mg.—Mining.
Min.—Mineral.
Mittlngn.—Mitteilungen.
Oestr.—Oesterreichische; Oesterreich.
Proc.—Proceedings.
Quart.—Quarterly.
Rec.—Record.
Rept.—Report.
Res.—Resources.
Rev.—Review; Revue; Revista.
Sci.—Science; Sciences.
Scient.—Scientific.
Soc.—Society; Société; Società.
Suppl.—Supplement; Supplementary.
Surv.—Survey.
Tech.—Technology.
Trans.—Transactions.
Ver.—Verein.
Verb.—Verband.
Verh.—Verhandlungen.
Univ.—University.
Zentralbl.—Zentralblatt.
Ztg.—Zeitung.
Zts.—Zeitschrift.

PART I.

GEOLOGY AND MINERALOGY.

CHAPTER I.

MINING GEOLOGY, ORE GENESIS AND MINERALOGY.

GEOLOGY.

Allen, R. C.; Barrett, L. P.—*A Revision of the Sequence and Structure of the Pre-Keweenawn Formations of the Eastern Gogebic Iron Range of Michigan.* [Contains discussion on the subject by others].—Jnl. of Geol. Dec. 1915; p 689; pp 41*; 75c.

Anderson, Robert; Pack, R. W.—*Geology and Oil Resources of the West Border of the San Joaquin Valley, North of Coalings, California.* [Discusses the geological evidence which show the possibility of finding oil in commercial quantities].—U. S. G. S. Bull. 603; pp 220*.

Arber, Newell, E. A.—*Geology of the Kent Coalfield, England.* [Abst. of a paper read before the Inst. of Mg. Eng., England].—I. & C. Tr. Rev. Dec. 10 1915; p 713; pp 1½*; 35c; Coll'y Guard. Dec. 10 1915; p 1185; pp 2; 35c.

Arentz, S. S.—*Low Grade Complex Ores of Park City, Utah.* [A brief on each of the vicinities making up the district].—Mg. World Aug. 14 1915; p 252; pp 4; 10c.

Ashley, G. H.—*Rhode Island Coal.* [It is said the coal has and has not been used for commercial purposes, and this investigation was for the purpose of deciding the question].—U. S. G. S. Bull. 615; pp 62*.

Ball, L. C.—*Molybdenite, in the Mount Perry District, Queensland.* [Treats on the geology and history of this recently discovered district].—Queen. Govt. Mg. Jnl. Oct. 15 1915; p 503; pp 2¾*; 35c.

Ball, L. C.—*The Mount Taylor Gold Mine, Kingston, Australia.* [Deals with the geology, history, mine workings and ore reserves].—Queensland Mg. Jnl. June 15 1915; p 262; pp 3½*; 35c.

Bancroft, Howland.—*Geology of Gold Road District, Arizona.* [Reviews the formation of the country where veins have formed at the contact of or within the chloritic intrusive andesite].—M. & S. P. July 3 1915; p 21; pp 1*; 20c.

Bancroft, J. A.—*The Copper Deposits of Eastern Townships of the Province of Quebec.* [Treats in general on the history, production and geology of the district and later gives details of deposits and mines].—Dept. of Colonization Mines & Fisheries, Quebec Report; pp 295*.

Beeson, J. J.—*The Disseminated Copper Ores of Bingham Canyon, Utah.* [A detailed account of the ore genesis and the rock formations of the district].—A. I. M. E. Bull. Nov. 1915; p 2191; pp 46*; 35c.

Bleeck, A. W. G.; Rangoon, F. G. S.—*Contributions to the Economic Geology and the Results of Petroleum Borings on the Minbu Oilfield, India.* [The land covered has been surveyed into sections of one square mile and consecutively numbered. This article describes the boring results and geologic features by the said sections].—Trans. Mg. & Geol. Inst. of India March 1915; p 61; pp 13; 60c.

Blood, C. C.—*Tyrone District, Grant County, New Mexico.* [On the expenditures, development, etc., in the district].—Mg. World Aug. 21 1915; p 291; pp 2¾*; 10c.

Boise, C. W.—*Diamond Fields of German Southwest Africa.* [The topography, nature of the deposits and method of concentrating; from the Mg. Mag.].—S. Afr. Mg. Jnl. July 17 1915; p 468; pp 1; 35c.

Bolton, H.—*Fauna and Stratigraphy of the Kent Coal Field.* [A paper presented at a meeting of the Manchester Geological and Mining Society.].—Coll'y Guard. June 25 1915; p 1327; pp 1; 35c.

Bonine, C. A.—*Anticlines in the Clinton Sand Near Wooster, Wayne County, Ohio.* [The sandstone formation is oil and gas bearing, methods of prospecting and its features being here described].—U. S. G. S. Bull. 621-H.; pp 12*.

Bowen, N. L.—*The Crystallization of Haplobasaltic, Haplodioritic and Related Magmas.* [Treats on the partial crystallization of the mineral constituents at va-

rious temperatures].—Amr. Jnl. of Sci. Aug. 1915; p 161; pp 25*; 60c.

Bowen, C. F.—*Possibilities of Oil in the Porcupine Dome, Rosebud County, Montana.* [Shows the geological features which indicate oil].—U. S. G. S. Bull. 621-F; pp 10*.

Brooks, A. H., and Others.—*Mineral Resources of Alaska, Report on Progress of Investigations in* 1914. [Contains discussions and descriptions on the gold, copper, tin, mercury and iron deposits in Alaska].—U. S. G. S. Bull. 622; pp 380*.

Bunker, C. R.—*What a Nevada Man Thinks of the Rochester District.* [Sets forth the present prospects and condition prevailing in the district].—Mg. World Sept. 18 1915; p 431; pp 4¼*; 10c.

Burchard, E. F.—*Iron-Bearing Deposits in Bossier, Caddo and Webster Parishes, Louisiana.* [The ore up to this time of no commercial value runs from 38% to 45% iron].—U. S. G. S. Bull. 620-G; pp 22*.

Burchard, E. F.—*Iron Ore in Cass, Marion, Morris and Cherokee Counties, Texas.* [The ores which have not been extensively worked contain silica and alumina].—U. S. G. S. Bull. 620-E; pp 41*.

Butts, Charles.—*Geology and Mineral Resources of Jefferson County, Kentucky.* [The resources are low and consist principally of limestone, clay, gravel and a shale from which oil might, but is not distilled].—Ky. Geol. Surv. IV; III; pp 270*.

Cairnes, D. D.—*The Yukon-Alaska International Boundary, Between Porcupine and Yukon Rivers.* [An account of the stratigraphy and geology of the region].—Canada Dept. of Mines Memoir 67; pp 161*.

Calvert, A. F.—*Mineral Resources of Minas Geraes, Brazil.* [The main deposits are of commercial iron, but gold, mica and gems are also found here in commercial quantities].—Spon & Chamberlain; pp 100*; $2.

Calvert, A. F.—*Salt in Cheshire, England.* [Deals with the geology of the deposits and methods used in working them, including the pumping of brine from underground].—E. & F. N. Spon; pp 1160*; $5.75.

Capps, S. R.—*Mineral Resources of the Chisana-White River District, Alaska.* [Gives a general review of the district and its routes of travel and then briefs on the important properties of the district].—U. S. G. S. Bull. 622-F; pp 40*.

Capps, S. R.—*The Willow Creek District, Alaska.* [On the geology, history and production].—U. S. G. S. Bull. 607; pp 86*.

Clapp, C. H.—*Geology of the Victoria and Saanich Map-Areas, Vancouver Island, B. C.* [The deposits are limestone and used for making lime and cement, and for flux in the smelters of the district].—Canadian Geol. Surv. Memoir 36; pp 143*.

Clapp, F. G.—*Petroleum and Natural Gas Resources of Canada.* [History of the industry and drilling operations are given, with geology of the formations and the future possibilities of the same. Briefs are given on many of the operating companies].—Canada Dept. of Mines No. 291; pp 404*.

Clarke, E. de C.—*Notes on the Geology of Meekatharra, Murchison Goldfield and Surrounding Country.* [Gives a concise review of the rocks, both acid and basic igneous rocks and the sedimentary formations. The location and mode of occurrence of the rocks from a geological as well as a petrological view is given].—W. Aust. Chamber Mines Jnl. April 30 1915; p 63; pp 8; 35c.

Cole, L. H.—*Report on the Salt Deposits of Canada and the Salt Industry.* [The mode and place of occurrence are given in detail with the method used for refining in the various places].—Canadian Report 325; pp 152*.

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Clarke, E. de C.—*Notes on the Geology of Meekatharra, Murchison Goldfield and Surrounding Country.* [Gives a concise review of the rocks, both acid and basic igneous rocks and the sedimentary formations. The location and mode of occurrence of the rocks from a geological as well as a petrological view is given].—W. Aust. Chamber Mines Jnl. April 30 1915; p 63; pp 8; 35c.

Clarke, F. W.—*Analyses of Rocks and Minerals from the Laboratory of the United States Geological Survey.* [A compilation of analyses giving the location from which the sample was taken].—U. S. G. S. Bull. 591; pp 376.

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Ferguson, H. G.—*Pocket Deposits of the Klamath Mountains, Cal.* [Covers the mineralogy and geology of the placer and lode gold deposits of the district].—Economic Geol. May 1915; p 241; pp 21*; 60c.

Ford, W. E.—*Appendix to Dana's Mineralogy.* [This completes the work to 1915].—Wiley & Sons; pp 87*; $1.50.

Foye, W. G.—*Nephelite Syenites of Haleiburton County, Ontario.* [Tells of the geology and petrology of the formation with some on the mineralogy].—American Jnl. of Sci. Oct. 1915; p 413; pp 24*; 60c.

Hamman, W. D.—*Practical Geology and Mineralogy.* [A practical, concise, elementary treatise on geology, mineralogy, petrology and ore genesis].—Way Press, Pasadena, Cal.; pp 240*; $2.50.

Hance, J. H.—*Use of the Slide Rule in the Computation of Rock Analyses.* [Treats on the use of the slide rule in converting chemical compositions to mineralogical ones].—Jnl. Geol. Sept. 1915; p 560; pp 8½; 75c.

Harbort, E.—*Ueber zonar in Steinsalz und Kainit Eingewachsene Magnetkieskristalle aus dem Kalisalzbergwerk Aller-Nordstern.* [Discusses the formation of magnetic crystals in the rock-salt and kainite deposits].—Kali Aug. 15 1915; p 250; pp 5*; 35c.

Hayes, A. O.—*Wabana Iron Ore of Newfoundland.* [Treats on the chemistry, petrology and genesis of the deposits, which are hematite].—Canada Dept. of Mines Memoir 78; pp 163*.

Howe, Ernest.—*Sulphide-Bearing Rocks from Litchfield, Conn.* [Describes the minerals and rocks which contain nickel-copper sulphides and are located in the vicinity of Prospect Hill. The deposits are too low to be of economic value].—Econ. Geol. June 1915; p 330; pp 18*; 60c.

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Johnston, John.—*Pressure as a Factor in the Formation of Rocks and Minerals.* [A geophysical review of the subject].—Jnl. of Geol. Dec. 1915; p 730; pp 18*; 75c.

Kemp, J. F.—*The Geology of the Iron-Ore Deposits in and Near Daiquiri, Cuba.* [The mineralogy, geology of the formation, petrology, and ore genesis are brought out].—A. I. M. E. Bull. Sept. 1915; p 1801; pp 36*; 35c.

Leith, C. K.; Mead, W. J.—*Metamorphic Studies—Convergence to Mineral Type in Dynamic Metamorphism.*—Jnl. of Geol. Nov. 1915; p 600; pp 8; 75c.

Lewis, J. V.—*Determinative Mineralogy.* [The tests are of both a physical and chemical nature].—J. Wiley & Sons; pp 155*; $1.50.

Lindgren, Waldemar.—*Processes of*

Mineralization and Enrichment in the Tintic District, Utah. [Microscopic sections are shown and the enrichment theory is taken up in detail].—Economic Geol. May 1915; p 225; pp 16*; 60c.

Lomax, James.—*The Microscopical Examination of Coal.* [A lecture read before the South Staffordshire Inst. of M. Engg.].—July 30, 1915; p 231; pp 2*; 35c.

Matson, G. C.—*The Phosphate Deposits of Florida.* [A review of the geology of the deposits with some description of the method of mining and refining the crude product].—U. S. G. S. Bull. 604; pp 101*.

Moses, A. J.—*Tables for the Determination of Gems and Precious Stones, Without Injury to the Specimen.* [Includes microscopic and physical tests].—School of Mines Qrt. April 1915; p 199; pp 34; 60c.

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Posnjak, E.; Allen, E. T.; Merwin, H. E.—*The Sulphides of Copper.* [Micrographic and megoscopical study of the thermic, chemical and crystallographic properties and peculiarities of copper sulphide minerals].—Economic Geol. Oct. 1915; p 491; pp 42*; 60c.

Ravicz, L. G.—*Experiments in the Enrichment of Silver Ores.* [A geochemical treatise on the deposition of silver ores as revealed by laboratory and field observations].—Econ. Geol. June 1915; p 368; pp 22; 60c.

Richard, L. M.—*Copper Deposits in the "Red Beds" of Texas.* [The copper is here associated with sedimentary clays and strata].—Economic Geol. Dec. 1915; p 634; pp 17; 60c.

Ross, C. P.; Lindgren, W.—*The Iron Deposits of Daiquiri, Cuba.* [On the geology, mode of occurrence and nature of the ore as detected under the microscope].—A. I. M. E. Bull. Oct. 1915; p 2171; pp 20*; 35c.

Saint-Smith, E. C.—*Annan Tinfield, Cooktown District, North Queensland, Australia.* [The main part is on the structural and economic geology and mineralogy of the district].—Queen. Gov. Mg. Jnl. Aug. 14 1915; p 376; pp 14*; 35c.

Segall, Julius.—*The Origin and Occurrence of Certain Crystallographic Intergrowths.*—Econ. Geol. Aug. 1915; p 462; pp 12*; 60c.

Turner, F. M., Jr.—*Vanadium: Its Chemical and Metallurgical Technology.* [The center of operations are in the tropics. History, occurrence, mineralogy, uses, etc., are taken up].—Canadian Mg. Jnl. Aug. 1 1915; p 457; pp 4*; 35c.

Walker, T. L.—*Certain Mineral Occurrences in the Worthington Mine, Sudbury, Ontario, and Their Significance.* [The mineral is nickel-copper in norite or diorite rock].—Economic Geol. Oct. 1915; p 536; pp 7*; 60c.

Whitman, A. R.—*Structural Features of the Porcupine Ore Deposits.* [The structural features and faulting are well illustrated].—Canadian Mg. Jnl. Oct. 1, 1915; p 589; pp 8*; 35c.

——— *The Microscopical Examination of Coal.* [Explains the operations and illustrates the results].—Coll'y Guard. July 9 1915; p 65; pp 1½*; 35c.

PART II.

ORES AND MINERAL PRODUCTS.

METALS AND METAL ORES.

CHAPTER II.

GOLD, SILVER AND PLATINUM.

GOLD

Gold Fields and Mining

Bancroft, G. J.—*Mining in Colorado.* [Gives the production and general current news of the state mining].—M. & S. P. Oct. 9 1915; p 554; pp 2*; 20c.

Brooks, Alfred H.—*Gold, Silver and Copper in Alaska in* 1914.—Mineral Res. of U. S. I:4; pp 13. Abst. in Mg. World Aug. 21 1915; p 289; pp 2; 10c.

Brooks, A. H.—*Mineral Resources of Alaska.* [A report in separate articles of the progress of economical importance in the various fields of the territory during 1914].—U. S. G. S. Bull. 622; pp 380*.

Brown, G. E.—*Prospecting in the Eastern Tropics.* [Reviews the various things to be encountered in the East Indies and Malay States].—Mg. Mag. July 1915; p 28; pp 5*; 50c.

Bunker, C. R.—*What a Neveda Man Thinks of the Rochester District.* [Sets forth the present prospects and condition prevailing in the district].—Mg. World Sept. 18 1915; p 431; pp 4¼*; 10c.

Calvert, A. F.—*Mineral Resources of Minas Geraes, Brazil.* [The main deposits are of commercial iron, but gold, mica and gems are also found here in commercial quantities].—Spon & Chamberlain; pp 100*; $2.

Capps, S. R.—*Mineral Resources of the Chisana-White River District, Alaska.* [Gives a general review of the district and its routes of travel and then briefs on the important properties of the district].—U. S. G. S. Bull. 622-F; pp 40*.

Capps, S. R.—*The Willow Creek District, Alaska.* [On the geology, history and production].—U. S. G. S. Bull. 607; pp 86*.

Carver, D. F.—*Gold Recovery at Placer Mines.* [Confined to the recovery by means of riffles and concentrating tables].—E. & M. J. Sept. 18 1915; p 472; pp 1¼*; 25c.

Cazalat, P.; Lawrie, W. W.—*The Collapse and Recovery of the Bantjes Central Incline Shaft.* [The shaft caved from the soaking of a near-by dike from a heavy rain].—S. Afr. Mg. Jnl. Sept. 11 1915; p 33; pp 1; Sept. 18 1915; p 59; pp 5*; 70c.

DeWitt, C. W.—*Prospecting in the Chiksan Concession, Korea.* [The system is explained, as well as the commercial value of the country in general].—M. & S. P. Dec. 11 1915; p 896; pp 2¼*; 20c.

Dunlop, J. P.—*Gold, Silver, Copper, Lead and Zinc in the Eastern States in* 1914.—Mineral Res. of U. S. L:5; pp 24.

Eakin, H. M.—*Mining in the Fairbanks and Hot Springs District, Alaska.* [A synopsis of the current operations in those fields].—U. S. G. S. Bull. 622-G; pp 17.

Eakin, H. M.—*Mining in the Juneau Region, Alaska.* [The milling and mining operations with a production table].—U. S. G. S. Bull. 622-C; pp 6.

Earl, T. C.—*The Testing of Alluvials.* [An account of the author's own experience in prospecting methods for testing and proving up alluvial deposits of tin and gold].—Mg. Jnl. London; book; $1.75.

Eddy, L. H.—*Bagley Scraper for Gravel Mining in Alaska.*—E. & M. J. Aug. 14 1915; p 257; pp 1½*; 25c.

Ellis, H. I.—*Mineral County, Montana. Mining Notes.* [Gives the history of gold, silver and lead mines and the prospects at present].—E. & M. J. Nov. 27 1915; p 895; pp 1½; 25c.

Ellis, H. I.—*Sluicing Methods at Fairbanks.* [Pole riffles are used and the method of cleaning up is described].—E. & M. J. Dec. 18 1915; p 993; pp 4*; 25c.

Ellis, H. I.—*Stoping Methods at Fairbanks, Alaska.* [Efficient operation of the gravel deposits consists in thawing and here shoveling is also of importance].—E. & M. J. Sept. 25 1915; p 503; pp 4*; 25c.

Ellis, Hubert I.—*Thawing Methods at Fairbanks, Alaska.* [Not only the method of excavating is described, but the method of thawing and different types of jets for steam are taken up in detail].—E. & M. J. July 3 1915; p 1; pp 5½*; 25c.

Ellis, H. I.—*Winter Mining at Fairbanks.* [Principally surface operations].—E. & M. J. Oct. 30 1915; p 707; pp 4½*; 25c.

Galloway, J. D.—*Prospecting Gold Gravel with Keystone Drills, B. C.* [Abst. from a Provincial Geol. Report].—Canadian Mg. Jnl. Dec. 15 1915; p 753; pp 1¾; 35c.

Galloway, R. E.—*Mining Opportunities in Kern County, California.* [Speaks of the gold, copper, coal, etc., which occur in the district].—Mg. & Oil Bull. Oct. 1915; p 274; pp 3½*; 25c.

Graham, Thomas.—*Notes on Mine Accidents in British Columbia for Year* 1914. [Reasons for and conditions under which accidents occurred in both metalliferous and coal mines. Comparisons with previous years are also made as well as comparison of different places and conditions surrounding].—Canadian Mg. Inst. Bull. July 1915; p 516; pp 8; 35c.

Gullachsen, B. C.—*Hydraulic Stowing in the Gold Mines of the Witwatersrand.* [A method for washing sand fill into old stopes].—S. Afr. Engg. July 1915; p 10; pp 3*; 35c. Mg. World Oct. 9 1915; p 569; pp 1*; 10c.

Haggen, E. A.—*Placer Mining in the Okanagan Valley, B. C.* [A review of hydraulic operations there].—Mg. Engg. & Elect. Record July 1915; p 114; pp 1*; 35c.

Hall, H. H.—*The Water Supply for the Klondike Hydraulic Mines, Alaska.* [The cost of constructing flumes and pipe lines for carrying water to the scene of operations].—M. & S. P. Aug. 28 1915; p 321; pp 3*; 20c. Western Eng. Aug. 1915; p 69; pp 3*; 35c.

Hayden, H. H.—*Presidential Address.* [An address made to the Mining and Geological Institute of India on the mineral production and conditions of the industry in India].—M. & G. Inst. of Ind. June 1915; p 14; pp 21*; 50c.

Heikes, V. C.—*Gold, Silver, Copper, Lead and Zinc in Arizona in* 1914. [Statistics on production and a review of the industries related for the year].—Min. Res. of U. S. I:15; pp 49.

Henderson, C. W.—*Gold, Silver, Copper, Lead, and Zinc in New Mexico and Texas in* 1914. [Detailed and general figures are given on the production with some information regarding the industry in general].—Min. Res. of U. S. I:8; pp 28.

Henderson, C. W.—*Gold, Silver, Copper and Lead in South Dakota and Wyoming in* 1914. [Production tables on the metals spoken of].—Min. Res. of U. S. I:9; pp 15.

Henderson, C. W.—*Gold, Silver, Copper, Lead and Zinc in Colorado in* 1914. [The counties are reviewed separately aside from the state as a whole].—Min. Res. of U. S. I:10; pp 59.

Higgins, W. C.—*The Daly-Judge Mine and the Snake Creek Tunnel, Utah.* [Takes up the geology and hoisting operations with a general description of the mines].—S. L. Mg. Rev. Oct. 30 1915; p 9, pp 6½*; 25c.

Higgins, W. C.—*The Rejuvenation of the Old Maxfield Mine.* [A review of the property and its operations].—S. L. Mg. Rev. Oct. 15 1915; p 13; pp 3*; 25c.

Hill, James M.—*Description of High Grade Mining District, California.* [Treats on the history of the district, giving a review of the geology of the formation and ore deposits which occur as veins in rhyolite and andesite. Some of the mines are then taken up and a synopsis of their works given; U. S. G. S. Bull.].—S. L. Mg. Rev. June 30 1915; p 9: pp 3½*; 25c.

Hill, J. M.—*Hawthorne Mining District, Mineral County, Nevada.* [Brings out the production and financial operations as abstracted from a U. S. G. S. Bull.].—Mg. Sci. Sept. 1915; p 25; pp 4; 35c.

Hlebnikoff, K. I.—*Dredging on the Amur.* [A placer deposit in Manchuria].—M. & S. P. Aug. 21 1915; p 283; pp 1*; 20c.

Holford, W. G.—*Mining Problems of the Eastern Rand.* [A paper read before the Inst. of M. & Met.].—S. Afr. Mg. Jnl. Sept. 4 1915; p 7; pp 1; 35c.

Honnald, W. L.—*Methods of Mining at the Brakpan Mines, South Africa.* [A paper read before the A. I. M. E. treating on the development, stoping, haulage and ore reserves at these mines on the Witwatersrand, S. Afr.].—S. Afr. Engg. Aug. 1915; p 29; pp 4*; 35c.

Honnold, W. L.—*Mining Conditions on the Witwatersrand.* [A paper read before the A. I. M. E. meeting].—M. & S. P. Aug. 21 1915; p 285; pp 2*; 20c. S. Afr. Mg. Jnl. Sept. 11 1915; p 31; pp 1½; 35c.

Howard, L. O.—*Mining in Utah.* [Discusses the metal situation in Utah on account of the flurry in the market. Many good points are brought to light regarding the mining and smelting industry of the state].—M. & S. P. July 3 1915; p 15; pp 2; 20c.

Howard, L. O.—*Mining in Utah.* [A current review of conditions in the Park City district, Utah].—M. & S. P. Aug. 21 1915; p 280; pp 2½*; 20c.

Hyde, M. L.—*Correct Tipple Design.*—[This sets forth what the features of a good tipple should be and what duties it should perform].—Coal Age Sept. 18 1915; p 450; pp 3½*; 20c.

Ingham, W.—*The Water Supply of the Rand, South Africa.* [A paper read before the S. A. I. of E.].—S. Afr. Mg. Jnl. Oct. 9 1915; p 131; pp 1; Oct. 16 1915; p 159; pp 1; Oct. 30 1915; p 203; pp 1½; $1.05.

Jimenez, Carlos P.—*Estadistica Minera en* 1913. [Reviews the production of and industry regarding the various metals worked in Peru. Tables are given showing the production and accidents which occurred].—Cuerpo de Ingenieros de Minas Bull. 81; pp 132.

Johnson, B. L.—*Mining on Prince William Sound and the Gold and Copper Deposits of the Port Valdez District, Alaska.* [Takes up the geology and general conditions of the region, with separate descriptions of several properties located there].—U. S. G. S. Bull. 622-E; pp 58*.

Jones, F. A.—*The Mineral Resources of New Mexico.* [Gives a synopsis of all the minerals occurring in the state as regards their geology and location].—School of Mines Bull. 1; pp 77.

Lewis, R. S.—*Perseverance Mine and Alaska Gastineau Mill, Alaska.* [In general tells of the methods used for extracting the ore and the means of haulage to the mill, which is also briefly described]—M. & S. P. Sept. 11 1915; p 397; pp 3½*; 20c.

Low, S. V. F.—*An Example of Low Working Costs.* [A brief regarding the operation under consideration is given and supplemented with information on the cost of the operation].—Aust. Inst. M. E. Nov. 18 1915; p 59; pp 8*; 60c.

McBride, Richard.—*Annual Report of the Minister of Mines for the Year Ending Dec.* 31, 1914, *B. C.* [Details on the mining, milling, etc., of gold, copper, zinc, lead, silver, etc., in the province].—Bur. of Mines, Victoria, B. C.; pp 543*.

Merrin, A. H.—*Annual Report on Dredge Mining and Hydraulic Sluicing in* 1914, *Australia.*—Govt. Printer, Melbourne Australia; pp 16.

Nevius, J. N.—*The Larsson Gold Dredge.* [A dredge which has attempted towards working the gold from arid placer districts].—Mg. & Oil Bull. Sept. 1915; p 242; pp 3¼*; 25c.

Nevius, J. N.—*Mining Developments at Oatman, Ariz.* [Describes some of the properties and gives geology of the district].—Mg. & Oil Bull. Nov. 1915; p 288; pp 5*; 25c.

Percival, J. B.—*Gold Industry in Dutch Guiana, Its Past and Present.* [Dwells on the history, production and conditions in the country].—Mg. World Aug. 14 1915; p 249; pp 2½*; 10c.

Perry, R. W.—*Placers of Antioquia, Colombia.* [Nearly all the river gravels bear gold but most of the production comes from a few districts].—E. & M. J. Oct. 9 1915; p 585; pp 5*; 25c.

Pope, D. E.—*Gold Mining in Chile.* [Various information is given regarding the laws, custom and prices in the country].—Mg. Mag. July 1915; p 33; pp 4*; 50c.

Reid, J. H.—*Charters Towers Goldfield, Australia.* [The general conditions found in the district].—Queensland Mg. Jnl. July 15 1915; p 318; pp 2; 35c.

Rickard, T. A.—*Grass Valley Re-Visited.* [Takes up various points of interest regarding the methods of mining peculiar to the district, together with costs and production. A good explanation is given of a machine for testing the efficiency of air drills].—M. & S. P. July 3 1915; p 11; pp 3½*; 20c.

Rose, T. K.—*The Metallurgy of Gold.* [Separate chapters take up subjects related to gold as: methods of extraction, concentration, alloys, chemistry, placer deposits, crushing, geology, assaying, etc. Reasons for rather than a bare explanation is the policy].—J. B. Lippincott Co.; pp 601*; book; $6.50.

Smith, George Otis.—*Mid-Year Review of Mining Industry,* 1915. [Takes up the various metals separately giving their current production, quality and prices. The metals taken are those of copper, lead, gold, tungsten, iron, coal, petroleum and their associates. After the facts are revealed a general discussion of the situation is taken up].—Mg. World July 10 1915; p 58; pp 7; 10c.

Smith, Howard D.—*The Oatman District, Arizona.* [Describes the district in general and gives figures on its production].—M. & S. P. July 31 1915; p 172; pp 3½*; 20c.

Sparkes, G. M.—*Yavapai County, Arizona, Is a Very Active Mining District.* [A review of the present-day operations at the mines of the district].—Mg. World Dec. 18 1915; p 977; pp 2*; 10c.

Spaulding, M. B.—*Early Mining History of Pachuca, Mexico.* [The history begins with 1551, giving the development of the country and its production. Also takes up the use of Cornish pumps and the Patio process. [Mexican Mg. Jnl. May 1915; p 169; pp 3*; 35c.

Spearman, Charles.—*The Kowkash District, Ontario.* [A prospecting, canoe trip into the gold camp, describing the same, together with the geological formation].—Canadian Mg. Jnl. Oct. 1 1915; p 585; pp 3½*; 35c.

Stone, S. R.—*Handling Mine Supplies by Cableway at Nome, Alaska.* [It is impossible to build docks at this port and therefore ships are unloaded by aerial cableway while at anchor in the harbor. This cableway has a 1400-ft. span with about 100 ft. towers].—Mg. World July 10 1915; p 47; pp 2*; 10c.

Wauchope, A.—*Surface Equipment of the Sons of Gwalia Gold Mine, Describing Recent Additions.* [An article taking up the sliming, cyaniding, amalgamating, crushing, concentrating and agitating methods at the mill with various correlated information].—West Aust. Chamber of Mines June 30 1915; p 122; pp 6*; July 31 1915; p 158; pp 5*; $1.00.

Wepfer, G. W.—*Gold Mining in Bolivia.* [Reveals the history of the mining industry when carried on by the natives].—M. & S. P. July 10 1915; p 38; pp 1; 20c.

Weston, E. M.—*Practical Mining on the Rand.* [A series of lectures given practical men on stoping, drilling, blasting, driving, drifts, etc.].—Pub. by Author at Johannesburg; pp 55*.

Weston, E. M.—*Stoping Methods and Drilling Problems on the Witwatersrand* [From Mining Magazine].—S. Afr. Mg. Jnl. Oct. 9 1915; p 136; pp 1; 35c.

Wright, W. H.—*Hydraulicking at Waldo, Ore.* [Hydraulic elevators are needed in this field, as there is no slope to the country so as to take the tailings away].—E. & M. J. Aug. 7 1915; p 211; pp 4*; 25c.

——— *Alluvial Gold Deposits of New Zealand.* [A history of the life of the various deposits].—Mg. & Engg. Rev. Aug. 5 1915; p 259; pp ¾*; 35c.

——— *Annual Report of the South African Mines Department for* 1914. [Reviews the mining industry of copper, tin gold, gems and coal, giving figures on their respective productions].—S. Afr. Mines Dept.

——— *Cost of Mining and Milling at the Alaska Treadwell in* 1914. [Is a compilation of costs].—Mg. World July 24 1915; p 144; pp 1*; 10c.

——— *Development of Dredging in Yukon Territory, Alaska.* [Dredging started in 1899 and steam thawing is an important point].—E. & M. J. Dec. 25 1915; p 1039; pp 5¾*; 25c.

——— *Development of Mining in the Philippines.* [A historical review of production and growth].—Mg. Jnl. Nov. 27 1915; p 811; pp 1¼; 35c.

——— *Dredging in the Nome District, Alaska.* [Gives information on the current operations in 1914 and production data].—Mg. World Oct. 9 1915; p 570; pp 1; 10c.

——— *East Rand Proprietary Mines, Pumping Operations and Power Plant.* [The pumps work on an average lift of 4000 ft.].—Mg. World Sept. 11 1915; p 404; pp 1*; 10c.

——— *Gold.* [A review of the history of gold mining and production with particular reference to the provinces of Canada].—Canadian Mg. Jnl. Sept. 1 1915; p 521; pp 3*; 35c.

——— *Gold Mining in Yukon.* [Treats on the production and general operations].—Canadian Mg. Jnl. Oct. 15 1915; p 634; pp 1; 35c.

——— *Industrial Resources of the Northwest.* [On the mineral resources and production of coal, oil, gold, silver, copper, etc., in Oregon, Washington, Idaho, B. C., etc.].—Canadian Mg. Jnl. Oct .15 1915; p 632; pp 1¼; 35c.

——— *Is Rand Mine Ventilation Inadequate?* [Criticizes underground conditions which are the cause of much discontent].—S. Afr. Oct. 2 1915; p 103; pp 1½; 35c.

——— *Metalliferous Mining in British Columbia.* [A review of the mineral wealth and production of the province].—Mg. Engg. & Elect. Record July 1915; p 104; pp 2; 35c.

——— *Methods of Supporting Drives and Stopes at the Witwatersrand Mines.*—S. Afr. Engg. Oct. 1915; p 70; pp 1; 35c.

——— *Mining Activity in the Pilgrims' Rest District, South Africa.* [Abst. from the S. Afr. Mines Dept. Report showing the district to be one for the

poor man].—S. Afr. Mg. Jnl. Oct. 16 1915; p 151; pp 1¼; 35c.

——— *Mining Conditions in Ontario for Six Months Ending June* 30, 1915. [The production, etc., of gold, silver, nickel, copper and molybdenite].—Mg. World Oct. 9 1915; p 571; pp 1; 10c.

——— *Mining District of Asientos, Aguascalientes, Mexico.* [A general review of the deposits and their geology with some history and costs as applied to them].—Mexican Mg. Jnl. Aug. 1915; p 288; pp 1½; 35c.

——— *Mining Engineers' Opinion on the Oatman District, Ariz.*—Mg. World Nov. 27 1915; p 855; pp 1; 10c.

——— *Mining in Peru.* [An abst. from Peru Today reviewing gold, silver, tungsten and copper mines of the country].—Mexican Mg. Jnl. March 1915; p 92; pp 3; 35c.

——— *Mining in Southern Rhodesia, South Africa.* [Present conditions and affairs in the country].—S. Afr. Engg. Aug. 1915; p 26; pp 1½*; 35c.

——— *Mining on the Witwatersrand.* [A general review of the conditions, with cost and production figures].—E. & M. J. Aug. 21 1915; p 320; pp 2½*; 25c.

——— *Mining Prospects of the Murchison Range District.* [Gives an idea of the early production and operations in this South African field].—S. Afr. Mg. Jnl. Oct. 9 1915; p 129; pp 1½*; Oct. 30 1915; p 198; pp 1½; 70c.

——— *Mining Prospects and Railways of German East Africa.* [Extracts from engineers' reports on the gold fields].—S. Afr. Mg. Jnl. Nov. 20 1915; p 269; pp 2¼*; 35c.

——— *Reopening Old Levels.* [Speaks of the decline in production on account of the tributing system practiced in the Bendigo goldfield, Australia].—Victoria Chamber of Mines Report May 1915; p 101; pp 1½; 35c.

——— *Shamva Mines, Rhodesia, South Africa.* [A brief description of the mines' operation].—S. Afr. Engg. Aug. 1915; p 25; pp 1*; 35c.

——— *The Alaska Gold Mines* [Editorial].—E. & M. J. Dec. 4 1915; p 937; pp 1; 25c.

——— *The Oatman, Arizona, Mining District.* [An account of the mines, their production and geology].—Mg. World Nov. 13 1915; p 773; pp 3*; 10c.

——— *The Round Mountain Hydraulic Installation, Nevada.* [A water system for operating giants in placer mining].—S. L. Mg. Rev. July 15 1915; p 11; pp 1½*; 25c.

Milling, Metallurgy, Assaying, Etc.

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Baker, J. A.—*Building the Tough-Oakes Mill.* [A 100-ton cyanide plant in Ontario in which a complete record of costs is had and mill construction].—E. & M. J. Nov. 27 1915; p 869; pp 5*; Dec. 4 1915; p 915; pp 4*; 50c.

Bissell, Robert W.—*Smelting Methods at Magistral, Durango, Mexico.* [Deals with the history of the growth of companies and smelting in the district, and the description of the blast furnaces with their charges and operation; abst. Col. Sch. of Mines Qtly.].—Mg. World July 3 1915; p 17; pp 2½; 10c.

Bosqui, F. L.—*Metallurgical Practice in the Witwatersrand District, South Africa.* [Is a very brief synopsis of a paper read before the A. I. M. E. It dwells on the treatment of the slimes, precipitation and the final clean-up].—Mg. Jnl. June 1915; p 451; pp 1½; 35c. South Afr. Engg. June 1915; p 127; pp 7*; July 1915; p 5; pp 4*; 70c. S. Afr. Mg. Jnl. July 10 1915 and continued in 3 numbers; 4¼ pp; $1.40.

Butler, B. S.—*Potash in Certain Copper and Gold Ores.* [Analysis for the potash content of feldspar].—U. S. G. S. Bull. 620-J; pp 10.

Clark, Allan J.—*Notes on Homestake Metallurgy.* [Reviews the practice in detail from the crushing and classifying of the ore to the smelting of the zinc precipitate. Costs, together with detailed information regarding consumption and time with curves will also be found].—A. I. M. E. July 1915; p 1381; pp 20*; 35c. Mg. World July 3 and 10 1915; 20c. Canadian Mg. Jnl. July 15 1915; p 429; pp 4*; 35c. M. & S. P. July 17 1915; p 87; pp 4½*; 20c.

Clevenger, G. H.—*Electrolytic Precipitation of Gold, Silver and Copper from Cyanide Solutions.* [A paper read before the American Electrochemical Soc.].—M. & S. P. Nov. 13 1915; p 742; pp 8*; 20c. Met. & Chem. Engg. Nov. 1 and 15 1915; pp 12*; 70c. Mex. Mg. Jnl. Dec. 1915; p 430; pp 3; 35c.

Collins, H. F.—*Concentration of Gold in Bottoms in the Converter.* [Abst. from a paper read before the Inst. of M. and Met., London. Contains tables of results and description of tests].—M. & S. P. July 24 1915; p 132; pp 3; 20c.

Crampton, F. A.—*Platinum Assaying at the Boss Mine, Goodsprings, Nevada.* [A method by which gold, copper, platinum and paladium can be run in one day].—M. & S. P. Aug. 14 1915; p 231; pp 2; 20c.

Crook, W. J.—*The Testing of Ores for the Cyanide Process.* [A means by which the best cyanide treatment for ores can be previously ascertained by analysis].—Chem. Eng. July 1915; p 31; pp 2½; 35c.

Del Mar, Algernon.—*The Position of the Tube-Mill.* [Is a discussion on the most advantageous place for a tube mill to be placed in the circuit of a cyanide mill].—M. & S. P. July 24 1915; p 130; pp 2*; 20c.

Drucker, A. E. — *Plant-Construction Costs in Korea.* [This cyanide plant was to re-treat a tailings dump with zinc and lead sulphides in it].—M. & S. P. Dec. 11 1915; p 887; pp 1*; 20c.

Durant, H. T.—*Refining Cyanide Precipitates.* [It is stated that the acid treatment is not efficient and the methods here described remove all impurities].—E. & M. J. Sept. 25 1915; p 523; pp 1½; 25c.

Franklin, E. C.; Holmes, J. A.; Gould, R. A.—*Report of the Selby Smelter Commission .* [An investigation into the smelter smoke problem to increase the efficiency and lessen the waste and to lessen its ill effects on the farming of the community. Sulphides were smelted containing lead, silver, gold].—U. S. Bur. of Mines Bull. 98; pp 528*; $1.25.

Galbraith, C. S.—*Flotation in Australia.* [The mineral particles are coated with oil so as to float. Considerable history of the district is also taken up here].—M. & S. P. July 17 1915; p 83; pp 3½*; 20c.

Geliens, G. A.—*The Geliens Process of Treating Refractory Ores.* [A method in which hydro-metallurgy is first employed and later amalgamation. It is for use with copper, gold and silver ores].—Mg. World Sept. 25 1915; p 473; pp 2; 10c.

Haley, C. S.—*Relative Error in Alluvial Sampling.* [On the drill and shaft methods for sampling placer gold deposits].—M. & S. P. July 17 1915; p 79; pp 1½; 20c.

Keeney, R. M.—*The Cyanide Plant of the Baker Mines Co., Cornucopia, Oregon.* [Method of operation, haulage, amalgamation, operating costs, etc.].—Met. & Chem. Engg. Dec. 15 1915; p 947; pp 6*; 25c

Lass, W. P.—*Electric Furnace at the Alaska Treadwell.* [Paper read before the A. I. M. E. on the operation of the furnace and the mixtures charged].—Mg. World July 17 1915; p 97; pp 1½*; 10c. M. & S. P. Aug. 7 1915; p 209; pp 1½*; 20c.

Lay, Douglas.—*Gold Precipitation on Paper.* [An electrolytic method in which the paper can be burned and no impurities left in the refined bullion].—E. & M. J. Aug. 14 1915; p 276; pp 1½; 25c.

Low, V. F. S.—*Cyanidation in Western Australia.* [Gives milling costs and details of construction and operation in use in the district].—M. & S. P. Nov. 27 1915; p 819; pp 5*; 20c.

McCauley, W. J.—*Solution of Pulp Problems by Graphic Methods.* [Treats on the solving of pulp problems by straight line curves].—E. & M. J. July 17 1915; p 98; pp 3*; 25c.

McLaren, Alex.—*Installation of Three Lane Mills at the Gloster Plant, Montana.* [Is mostly on the crushing and equipment of the plant].—S. L. Mg. Rev. July 30 1915; p 9; pp 2*; 25c.

Muir, D. D.—*Sampling Low-Grade Ore on a Large Scale.* [Tests made on a $15 gold ore, Ebner mine, Juneau, Alaska, in investigating a sand and concentration method].—M. & S. P. Nov. 13 1915; p 737; pp 4¾*; 20c.

Obrien, T. S.—*Amador Consolidated Milling Plant, Amador City, Cal.* [Amalgamation is not used in the mortars, an attempt is made to eliminate stamps and an unusual zinc-precipitating method is used].—E. & M. J. Aug. 14 1915; p 255; pp 2¾*; 25c.

Palmer, L. O.—*Gold Milling in California—A Comparison.* [Figures are given on the results of various mills, their system is described and then compared with the rest. Crushing, amalgamation, concentration and sampling are spoken of and commented on.]—Met. & Chem. Engg. Sept. 15 1915; p 617; pp 6¾*; 30c.

Parmelee, H. C.—*Cyanidation of Low Grade Sulphide Ores in Colorado.* [Besides a general review of the industry as a business different processes are described which are part of the cyanidation process practiced there].—Met. & Chem. Eng. July 1915; p 421; pp 4½*; 30c.

Parsons, L. A.—*Sampling an Erratic Orebody.* [Takes it up in considerable with regard to gold deposits].—Mg. Mag. Sept. 1915; p 151; pp 4; 50c.

Pearson, Ralph. — *Miller's Chlorine Process at the Royal Mint, Ottawa.* [Tells of the advance of the method of chloridizing gold with natant chlorine so as to separate it from an alloy and obtain a very fine-grade finished product].—Ca-

nadian Mg. Inst. Bull. July 1915; p 531; pp 7*; 35c.

Peters, Franz.—*Neuerungen in der Elektrometallurgie der Edelmetalle.* [On the electrical treatment in furnace, precipitation and refining of gold and silver].—Glückauf Nov. 13 1915; p 1110; Nov. 20; p 1135; pp 9½; $1.

Pettis, E. S.—*Ore Dressing on the Mother Lode, California.* [Methods and results obtained in California cyanide mills and plants are told of in general and in some instances more specifically]. M. & S. P. Sept. 18 1915; p 433; pp 3½*; 20c.

Pratt, T. E.—*LaLucha Cyanide Mill, Mexico.* [Details of its construction, operation and pre-grinding of the ore for treatment].—Mexican Mg. Jnl May 1915; p 162; pp 2½*; 35c.

Prosser, W. C.—*Concentrating Gold King Ores.* [Tables and flotation are used in concentrating this gold ore which occurs in Colorado].—E. & M. J. Oct. 16 1915; p 633; pp 1¼*; 25c.

Ralston, O. C.—*Precipitating Action of Carbon in Cyanide Solutions.* [Is a discussion on the reason for amorphous carbon precipitating gold in cyanide solutions].—M. & S. P. July 17 1915; p 77; pp 2; 20c.

Rose, Thomas Kirke.—*Refining Gold Bullion.* [Deals on a method of refining bullion by dissolving the gold as a chloride with nascent chlorine and redepositing the same from the electrolyte in the usual way; I. of M. & M.].—S. Afr. Mg. Jnl. May 29 1915; p 306; pp 1; June 19 1915; p 384; pp 1; 70c.

Sharwood, W. J.—*A Rule Governing Cupellation Losses.* [A paper read before the A. I. M. E. containing curves which can be used in rapidly determining the loss for varying conditions].—M. & S. P. Sept. 25 1915; p 481; pp 2½*; 20c.

Simmons, Jesse.—*Trojan Ore and Milling Practice, South Dakota.* [On sampling crushing and cyaniding the gold-ore where the seepage from the tailings pile is run through another precipitating medium].—M. & S. P. Nov. 6 1915; p 707; pp 3¾*; 20c.

Sinclair, J.—*Tailings Reclaimed by Cableway at Goldfield, Nev.* [The tailings dump is about 75 acres in extent].—Mg. World Oct. 23 1915; p 643; pp 2*; 10c.

Smith, E. A.—*The Sampling and Assay of Precious Metals.* [Comprising gold, silver, platinum and the platinum group metals in ores, bullion and products].—Sheffield, England; pp 460*; $4.50.

Stevens, T. B.—*The Metallurgy of the Sons of Gwalia Mine Ore, Australia.* [Gold ore with pyrite is treated by cyanide and amalgamation].—Jnl. West. Aust. Chamber of Mines Sept. 30 1915; p 211; pp 12*; 50c.

Thornhill, E. B.—*Recovery of Mercury from Amalgamation Tailing.* [Abst. of a paper to be read before the A. I. M. E. covering the chemistry and operations of the method].—M. & S. P. Aug. 7 1915; p 211; pp 1¼; 20c.

Wood, G. W.—*The Rochester Mill, Nevada.* [Costs and a description of the method used for treating the pulp from the thickeners].—M. & S. P. Aug. 28 1915; p 317; pp 3*; 20c.

Worcester, S. A.—*Simple Cyanide-Plant Design.* [A small plant with many automatic features and treating highly oxidized ores].—E. & M. J. Oct. 16 1915; p 631; pp 2½*; 25c.

——— *Auto-Reduction in the Precipitation of Gold.* [Takes up the effects of reducing agents in getting free gold from solution].—Jnl. Chem. Met. & Mg. May 1915; p 305; pp 1; 90c.

——— *Cost of Mining and Milling at the Alaska Treadwell in* 1914. [Is a compilation of costs].—Mg. World July 24 1915; p 144; pp 1*; 10c.

——— *Description of the Holt-Dern Chloridizing Process.* [A chloridizing roast of gold, copper and silver ores].—Mg. World Aug. 21 1915; p 294; pp 1; 10c.

———*Flotation at the Consolidated Arizona Smelting Co., Humboldt, Ariz.* [A description of the operations with milling costs and tables showing flotation records and Hardinge mill records].—Met. & Chem. Engg. Dec. 1 1915; p 897; pp 4*; 35c.

——— *Flotation in a Mexican Mill.* [Details on the method of operation with extraction and cost figures and information on tests made].—M. & S. P. July 24 1915; p 122; pp 5*; 20c.

——— *Metallurgy at the International Engineering Congress.* [Brief abstracts are given of the various papers read bearing on the material or operation under this division].—Met. & Chem. Engg. Oct. 15 1915; p 721; pp 8½; 30c.

——— *Mount Coolon Goldfield.* [Memo for the Under-secretary of Mines, reproposed erection of a state controlled stamp battery, Brisbane, Australia].—Queen Mg. Jnl. Sept. 15 1915; p 447; pp 1; 35c.

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Geology

Arentz, S. S.—*Low-Grade Complex Ores of Park City, Utah.* [A brief on each of the vicinities making up the district].—Mg. World Aug. 14 1915; p 252 pp 4; 10c.

Ball, L. C.—*The Mount Taylor Gold Mine, Kingston, Australia.* [Deals with the geology, history, mine workings and ore reserves].—Queensland Mg. Jnl. June 15 1915; p 262; pp 3½*; 35c.

Bancroft, Howland.—*Geology of Gold Road District, Arizona.* [Reviews the formation of the country where veins have formed at the contact of or within the chloritic intrusive andesite].—M. & S. P. July 3 1915; p 21; pp 1*; 20c.

Bastin, E. S.—*Ores of Gilpin County, Colorado.* [On the economic geology of ores, covering the mineralogy and ore genesis].—Economic Geol. May 1915; p 262; pp 34*; 60c.

Clarke, E. de C.—*Notes on the Geology of Meekatharra, Murchison Goldfield and Surrounding Country.* [Gives a concise review of the rocks, both acid and basic igneous rocks and the sedimentary formations. The location and mode of occurrence of the rocks from a geological as well as a petrological view is given].—W. Aust. Chamber Mines Jnl. April 30 1915; p 63; pp 8; 35c.

Crane, G. W.—*Geology of the Ore Deposits of the Tintic Mining District, Utah.* [The paper is confined to the occurrence and origin of the ore bodies].—A. I. M. E. Bull. Oct. 1915; p 2147; pp 14; 35c. E. & M. J. Nov. 6 1915; p 753; pp 4; 25c.

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Ferguson, H. G.—*Pocket Deposits of the Klamath Mountains, California.* [Covers the mineralogy and geology of the placer and lode gold deposits of the district].—Economic Geol. May 1915; p 241; pp 21*; 60c.

Hall, A. L.—*Geology of the Murchison Range, South Africa.* [Abst. from a Transvaal Geol. Surv. Memoir in 1912].—S. Afr. Mg. Jnl. Oct. 23 1915; p 178; pp 1½; 35c.

Harder, E. C.; Chamberlin, R. T.—*The Geology of Central Minas Geraes, Brazil.* [A general review is made at length regarding the manganese, iron, diamond and gold deposits].—Jnl. Geol. Aug. 1915; p 385; pp 40*; 75c.

Hart, G. S.—*Further Notes on the Geology of Mount Morgan, Australia.* [Read before Australian I. of M. E.; dwells entirely on the rock formation of the country which bears gold].—Queensland Mg. Jnl. June 15 1915; p 268; pp 3½*; 35c.

Hershey, O. H.—*Geology of the Pis Pis Mining District in Nicaragua.* [Is an economic treatise on the subject].—Mexican Mg. Jnl. May 1915; p 172; pp 3; 35c.

Hopkins, P. E.—*The Kowkash Gold Area.* [Gives the canoe routes, history and geology of the district].—Canadian Mg. Jnl. Oct. 1 1915; p 583; pp 2*; 35c.

Johnson, B. L.—*Mining on Prince William Sound and the Gold and Copper Deposits of the Port Valdez District, Alaska.* [Takes up the geology and general conditions of the region, with separate descriptions of several properties located there].—U. S. G. S. Bull. 622-E; pp 58*.

Johnson, B. L.; Capps, S. R.—*The Ellamar District, Alaska.* [Genesis, geology and history of the gold, silver and copper deposits].—U. S. G. S. Bull. 605; pp 125*.

Jones, E. L., Jr.—*A Reconnaissance in the Kofa Mountains, Arizona.* [On the geology of the country, which is mostly gold, some copper, silver and lead].—U. S. G. S. Bull. 620-H; pp 14*.

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Jones, F. A.—*The Mineral Resources of New Mexico.* [Gives a synopsis of all the minerals occurring in the state as regards their geology and location].—School of Mines Bull. 1; pp 77.

Knopf, Adolph.—*A Gold-Platinum-Palladium Lode in Southern Nevada.* [Deals principally with the Boss mine, giving the geology, character of the ore, genesis, occurrence and other details].—U. S. G. S. Bull. 620-A; pp 18*.

Larcombe, C. O. G.—*The Geology of Kalgoorlie, Australia.* [Takes up in detail the structural and chemical geology of the district with a review of the ore genesis].—M. & S. P. Aug. 14 1915; p 238; pp 7*; 20c.

Leverett, Frank; Taylor, Frank B.—*The Pleistocene of Indiana and Michigan and the History of the Great Lakes.* [Is a detailed description of the glacial deposits of sand gravel and gravel containing precious metals. It also takes up the glacial invasions in the country in detail].—U. S. G. S. Monographs Vol. LIII; pp 529*.

Lindgren, Waldemar.—*Geology and*

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Martin, G. C.; Johnson, B. L.; Grant, U. S.—*Geology and Mineral Resources of Kenai Peninsula, Alaska.* [Is a complete review of the geology and mineral resources of the country, both in general and detail for particular places].—U. S. G. S. Bull. 587; pp 243*.

McBride, Richard.—*Annual Report of the Minister of Mines for the Year Ending Dec. 31, 1914, B. C.* [Details on the mining, milling, etc., of gold, copper, zinc, lead, silver, etc., in the province].—Bur. of Mines, Victoria, B. C.; pp 543*.

Mellor, Dr.—*Far East Rand Geological Problems.* [On the structural geology of the district].—S. Afr. Mng. Jnl. Aug. 14 1915; p 554; pp 2*; 35c.

Mellor, Dr.—*The Geology of the Eastern Rand.* [In which the formation of various districts of the country are connected].—S. Afr. Mg. Jnl. June 19 1915; p 379; pp 1; 35c.

Mellor, E. T.—*Conditions of Deposition of the Witwatersrand System.* [A paper read before the Geol. Soc. of S. Afr.].—Mg. Mag. Nov. 1915; p 255; pp 8*; 50c.

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Nevius, J. N.—*Mining Developments at Oatman, Ariz.* [Describes some of the properties and gives geology of the district].—Mg. & Oil Bull. Nov. 1915; p 288; pp 5*; 25c.

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Saint-Smith, E. C.—*Mount Mascotte Gold Mine, Australia.* [A geological review giving results obtained from sampling].—Queensland Mg. Jnl. July 15 1915; p 320; pp 3*; 35c.

Schwarz, E. H. L.—*The Origin of Rand Gold.* [A paper read before the S. Afr. Assn. and confined to a placer theory for the deposition of the ores].—S. Afr. Mg. Jnl. July 17 1915; p 469; pp 1; 35c.

Smith, W. D.—*Notes on the Geologic Reconnaissance of Mountain Province, Luzon, Philippine Islands.* [A general talk covering the people, geography, geology, both structural and economic, etc.].—Philip. Jnl. of Sci. May 1915; p 177; pp 37*; 50c.

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Tyrrell, J. B.—*Pre-Cambrian Goldfields of Central Canada.* [A reprint from the transactions of the R. S. C.].—Trans. R. S. C. III:IX; pp 30*; 50c.

Whitman, A. R.—*Structural Features of the Porcupine Ore Deposits.* [The structural features and faulting are well illustrated].—Canadian Mg. Jnl. Oct. 1 1915; p 589; pp 8*; 35c.

Wright, Charles Will.—*Geology and Ore Deposits of Copper Mountain and Kasaan Peninsula, Alaska.* [Describes the formation and geology first in a general way, later taking it up in a more restricted manner as regards particular districts, deposits and mines. The nature of the ore is given as well as that of its deposition. Minerals found are copper ores, gold, magnetite and tin sulphide].—U. S. G. S. Prof. Paper 87; pp 110*.

——— *Alluvial Gold Deposits of New Zealand.* [A history of the life of the various deposits].—Mg. & Engg. Rev. Aug. 5 1915; p 259; pp ¾*; 35c.

——— *Annual Report of the Smithsonian Institute for* 1914. [A number of different articles are given on both mining and other sciences. Geological subjects and one on the Yukon gold district are the principal ones on mining].—U. S. Govt. Printing Office; pp 729*.

——— *Far East Rand Geology.* [Deals with the structural geology and the patches of conglomerate found in the eastern area].—S. Afr. Mg. Jnl. July 10 1915; p 447; pp 1¼; 35c.

——— *Geology of the Tom Reed—Gold Road Region.* [Reprinted from a report made on the district by W. H. Weed in July, 1915].—Mg. & Oil Bull. Sept. 1915; p 246; pp 4*; 25c.

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——— *Mining Engineers' Opinion on the Oatman District, Ariz.*—Mg. World Nov. 27 1915; p 855; pp 1; 10c.

——— *The Geology of Southern Rhodesia.* [Treats on the general geology of the district and gives details of some excavating which has taken place there. A description of the occurrence of gold in the forest sandstones is also given].—S. Afr. Mg. Jnl. May 29 1915; p 311; pp 1¼; 35c.

Miscellaneous

Barbour, Percy E.—*The Cost of an Ounce of Gold.* [The fact that the cost of a pound of copper is always given has led to this article, in which the costs for producing an ounce of gold are given for mines in all parts of the world. The quantity per ton of ore is also given with the production and the various mines are then discussed collectively].—E. & M. J. July 10, 1915; p 49; pp 1½; 25c.

Bissell, R. W.—*Smelting Methods at Magistral, Durango, Mexico.* [Describes the mine, smelter and furnace operations and gives cost sheet].—Columbia School of Mines Qtly. Nov. 1914; p 22; pp 8*; 65c.

Howard, L. O.—*Mining in Utah.* [Discusses the metal situation in Utah on account of the flurry in the market. Many good points are brought to light regarding the mining and smelting industry of the state].—M. & S. P. July 3 1915; p 15; pp 2; 20c.

Key, A. Cooper.—*Ore Reserves of the Rand, South Africa.* [Contains tables showing the reserves at the principal mines of the district for the year ending Dec. 31 1914].—E. & M. J. July 24 1915; p 159; pp 1; 25c.

King, Rowland.—*Determination of Gold in Blister Copper.* [A fire assay removing copper by excess litharge and scorification].—Queen Mg. Jnl Sept. 15 1915; p 455; pp ½; 35c.

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Palmer, L. A.—*A Novel Debris Dam.* [A dam built in California from placer mining debris. Considerable information is also given regarding the placer operations and costs in the state].—M. & S. P. July 10 1915; p 43; pp 4*; 20c.

Pope, D. E.—*Gold Mining in Chile.* [Various information is given regarding the laws, custom and prices in the country].—Mg. Mag. July 1915; p 33; pp 4*; 50c.

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Smith, George Otis.—*Mid-Year Review of Mining Industry,* 1915. [Takes up the various metals separately giving their current production, quality and prices. The metals taken are those of copper, lead, gold, tungsten, iron, coal, petroleum and their associates. After the facts are revealed a general discussion of the situation is taken up].—Mg. World July 10 1915; p 58; pp 7; 10c.

Toll, R. H.—*Travel and Mining in Honduras.* [Address before the Colorado Scientific Soc.].—Mexican Mg. Jnl. March 1915; p 95; pp 2½; 35c.

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——— *Mining Prospects and Railways of German East Africa.* [Extracts from engineers' reports on the gold fields].—S. Afr. Mg. Jnl. Nov. 20 1915; p 269; pp 2¼*; 35c.

——— *The History of Gold Mining in the Philippines.* [History goes back as far as the third century when Luzon exported the metal to China].—M. & S. P. Aug. 28 1915; p 325; pp 1¾*; 20c.

——— *The Valuation of Gold Mining Shares.* [On the present value of an annuity, interest and sinking fund and a simple formula for calculating share value].—S. Afr. Mg. Jnl. Nov.

13 1915; p 241; pp 1; Nov. 20; p 277; pp 1¼; 70c.

——— *The Value of Rand Ore Reserves, South Africa.* [Besides giving a description and figures on the ore reserpes a curve is shown on the variation in the value of the ore reserves].—S. Afr. Mg. Jnl. Sept. 4 1915; p 5; pp 1*; 35c.

Production

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CHAPTER III.

Copper.

Mines and Mining

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Cromwell, R. H.—*Steel Shaft Timbering at Los Ocotes Mine.* [From the Columbia School of Mines Quart. The shaft of this copper mine, located in Mexico, is 800 ft. deep].—Mg. World Sept. 25 1915; p 479; pp 1½*; 10c.

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Goodwin, L. Hall.—*Shaft-Rockhouse Practice in the Copper Country, Michigan.* [Has a complete description of the four methods of handling the rock and ore in the copper country, also sectional drawings showing the structure of the buildings].—E. & M. J. July 3 1915; p 7; pp 5½*; July 10 1915; p 53; pp 4*; 50c.

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Haggen, E. A.—*Britannia Mine, Howe Sound, B. C.* [A most complete description of the mine and mill operations and construction. A 4-page supplement is given showing a detailed drawing of the mill. The geology, surroundings, etc., are also given].—Mg. Engg. & Elect. Rec. Aug. 1915; p 129; pp 20*; 35c.

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Reid, Thomas T.—*The Engels Mine and Mill.* [Reviews the camp in general, giving a description of the formation, the mines, costs and mill which no other process than flotation is used].—M. & S. P. July 31 1915; p 167; pp 5*; 20c.

Sherman, G. F. G.—*Tramming and Hoisting at Copper Queen Mine, Ariz.*

[Gives details regarding efficiency tests, methods of operation and costs in detail. Electric haulage is used].—A. I. M. E. Bull. Sept. 1915; p 1836; pp 51*; 35c. Mg. World Oct. 9 1915; p 565; pp 1½*; 10c.

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Sykes, Wilfred.—*A Large Electric Hoist at Butte, Mont.* [The shaft depth here is 4000 ft. and the net load handled is 14,000 lbs. with a maximum hoisting speed of 3000 ft. per minute].—A. I. M. E. Aug. 1915; p 1819; pp 9*; 35c. Elect. Oct. 1 1915; p 955; pp 2¼*; 35c.

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——— *Arizona Copper Miner's Strike.* [A general review giving their present scale of wages].—E. & M. J. Oct. 9 1915; p 605; pp 2¾*; 25c.

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——— *Copper in Germany.* [An abst. from the New York Evening Post, giving a historical review of copper mining in Germany].—E. & M. J. Dec. 25 1915; p 1056; pp 2½; 25c.

——— *Granby Con. Mining, Smelting & Power Co., B. C.* [In general on their costs, production and operation].—Mg. Engg. & Elect. Record July 1915; p 118; pp 2½*; 35c.

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——— *Mining in the Province of Quebec During the First Six Months of* 1916. —Bull. Canadian Mg. Inst. Sept. 1915; p 649; pp 3; 35c.

——— *Ore Handling by the Magma Copper Co., Arizona.* [A 30-mile railroad connects the mines and mills with the main line. The mills and mines are also spoken of in regard to their general operation].—Mg. World Sept. 11 1915; p 405; pp 2*; 10c.

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Austin, W. L.—*Leaching Copper Ore.* [With various original suggestions the article is a general review of the subject].—M. & S. P. Aug. 7 1915; p 199; pp 2; 20c.

Bissell, Robert W.—*Smelting Methods at Magistral, Durango, Mexico.* [Deals with the history of the growth of companies and smelting in the district, and the description of the blast furnaces with their charges and operation; abst. Col. Sch. of Mines Qtly.].—Mg. World July 3 1915; p 17; pp 2½; 10c.

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Brunton, Fred K.—*The British Columbia Co.'s Smelter, Greenwood, B. C.* [The entire operations of the smelter are described, including costs, furnace charges, etc., in detail. The methods are naturally efficient, as the company worked with a profit one of the lowest grade orebodies in America].—A. I. M. E. July 1915; p 1401; pp 17*; 35c. Canadian Mg. Jnl. July 15 1915; p 440; pp 3½*; 35c.

Burman, B. F.—*Efficiency of the Blast Furnace Operation.* [Tabulated data is given and considerable theory is propounded on the operation of the blast, the chemical part being left out].—Met. & Chem. Engg. Sept. 15 1915; p 524; pp 5; 30c.

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CHAPTER IV.

Lead, Zinc and Cadmium.

LEAD

Mines and Mining

Arentz, S. S.—*Low-Grade Complex Ores of Park City, Utah.* [A brief on each of the vicinities making up the district].—Mg. World Aug. 14 1915; p 252; pp 4; 10c.

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DeWilde, E. J.—*Churn Drilling in Wisconsin Lead-Zinc District.*—Mg. World July 31 1915; p 178; pp 1; 10c.

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ZINC

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Gerold, Oscar.—*Die Technische Bedeutung der Staubfrage für Zinkhütten.* [Describes methods used in handling dust in refining zinc].—Metall & Erz Oct. 8 1915; p 403; pp 8*; Oct. 22 1915; p 419; pp 7½*; $1.

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Howard, L. O.—*The New Mill of the Daly West Mining Co., Park City, Utah.* [Details and figures on the construction and operation of the new and old mill. A comparison is made of the two mills, the new one using both tables and flotation for concentrating].—Met. & Chem. Engg. Sept. 15 1915; p 597; pp 5¼*; 30c.

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Leslie, E. H.—*Notes on the Metallurgy of Zinc.* [A general review of the smelting and milling of zinc, giving costs].—M. & S. P. July 31 1915; p 162; pp 5*; 20c.

Lewis, J. H.—*Electrostatic Separation of Pyritic Zinc Ores, Wisconsin.* [The pyrite is oxidized in a roaster to a magnetic oxide].—M. & S. P. Dec. 18 1915; p 927; pp 2½*; 20c.

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——— *Anaconda to Build Big Zinc Reduction Plant.* [A wet electrolytic process will be used].—Mg. World Dec. 25 1915; p 1013; pp 1¼; 10c.

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Heikes, V. C.—*Gold, Silver, Copper, Lead and Zinc in Arizona in* 1914. [Statistics on production and a review of the industries related for the year].—Min. Res. of U. S. I:15; pp 49.

Henderson, C. W.—*Gold, Silver, Copper, Lead, and Zinc in New Mexico and Texas in* 1914. [Detailed and general figures are given on the production with some information regarding the industry in general].—Min. Res. of U. S. I:8; pp 28.

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Jimenez, Carlos P.—*Estadistica Minera en* 1913. [Reviews the production of and industry regarding the various metals worked in Peru. Tables are given showing the production and accidents which occurred].—Cuerpo de Ingenieros de Minas Bull. 81; pp 132.

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CADMIUM.

Juretzka, Franz,—*Uber Rohmaterialbeschaffung, Technik und Rentabilität bei der Metallurgischen, Cadmiumgewinnung.* [The metallurgical treatment of cadmium for refining it from the crude ore].—Metall & Erz June 22 1915; p 235; pp 6*; 50c.

CHAPTER V.

Iron and Steel.

Iron Ores and Mining

Alden, R. C.; Barrett, L. P.—*A Revision of the Sequence and Structure of the Pre-Keweenawn Formations of the Eastern Gogebic Iron Range of Michigan.* [Contains discussion on the subject by others].—Jnl. of Geol. Dec. 1915; p 689; pp 41; 75c.

Broan, J. M.—*Sinking the Woodbury Shaft, Michigan.* [A paper read before the L. S. M. I.].—M. & S. P. Nov. 13 1915; p 734; pp 2½; 20c.

Brooks, A. H., and Others.—*Mineral Resources of Alaska, Report on Progress of Investigations in* 1914. [Contains discussions and descriptions on the gold, copper, tin, mercury and iron deposits in Alaska].—U. S. G. S. Bull. 622; pp 380*.

Burchard, E. F.—*Iron-Bearing Deposits in Bossier, Caddo and Webster Parishes, Louisiana.* [A general description, followed by taking up the several vicinities of the district separately].—U. S. G. S. Bull. 620-G; pp 22.

Burchard, E. F.—*Iron Ore in Cass, Marion, Morris and Cherokee Counties, Texas.* [The ores are hematite and limonite and their economic value is considerable in the concentration of the ore]. U. S. G. S. Bull. 620-E; pp 41*.

Burr, F. L.—*The Steel Headframe at No. 9 Shaft, Republic Mine, Vulcan, Mich.* [100-ft. headframe with sheaves in tandem was constructed in 7 weeks and cost $8400].—E. & M. J. Sept. 4 1915; p 379; pp 4*; 25c.

Calvert, A. F.—*Mineral Resources of Mias Geraes, Brazil.* [The main deposits are of commercial iron, but gold, mica and gems are also found here in commercial quantities].—Spon & Chamberlain; pp 100*; $2.

Dake, C. L.—*A Study of Bog Iron Ore Deposits.* [Abst. from a paper read before the L. S. M. I. on the genesis of ores in swamps and glaciated regions].—I. Tr. Rev.; p 486; pp 1; 25c.

Dake, C. L.—*The Formation and Distribution of Bog Iron-Ore Deposits.* [Reviews the geochemical formation of the secondary ore by solutions and how the ore is related to glaciation].—A. I. M. E. July 1915; p 1429; pp 8; 35c.

Doak, S. E.—*Iron-Ore Agglomeration in Rotary Kilns.* [Costs, kiln construction, output, prevention of rings, treatment of pyrite cinders and uses of the product are dealt with separately. [From A. I. M. E.].—Iron Age Sept. 9 1915; p 574; pp 2; 30c.

Donovan, P. W.—*Exploration and Drilling on the Cuyuna Range, Minnesota.* [Abst. of paper presented at the L. S. M. I. The type of drill used is a churn drill with a diamond drill attachment].—Mg. World Sept 18, 1915; p 441; pp 2¼; 10c. I. Tr. Rev. Sept. 16 1915; p 534; pp 1¾; 25c.

Döring, T.—*Fortschritte auf dem Gebiete der Metallanalyse im Jahre* 1914. [A brief review of the iron, platinum, nickel, cobalt and alloy industry].—Chem. Ztg. Sept. 29 1915; p 734; pp 3½; 35c.

Eakin, H. M.—*Iron-Ore Deposits Near Nome and Placer Mining in Seward Peninsula, Alaska.* [For the most part separate brief descriptions of various properties].—U. S. G. S. Bull. 622-I; pp 13.

Edwards, Geo. E.—*Mining Activities on the Iron Ranges.* [On the mining operations of the day in Minnesota and Michigan].—Mg. World Sept. 4 1915; p 353; pp 7*; 10c.

Geijer, Per.—*Some Problems in Iron Ore Geology in Sweden and in America.* [On the geology and genesis of various iron oxide deposits, including those which have a high percentage of silica].—Econ. Geol. June 1915; p 299; pp 31*; 60c.

Harder, E. C.; Chamberlin, R. T.—*The Geology of Central Minas Geraes, Brazil.* [A general review is made at length regarding the manganese, iron, diamond and gold deposits].—Jnl. Geol. Aug. 1915; p 385; pp 40*; 75c.

Hart, W. C.—*Open-Pit Mining on Gogebic Range, Mich.* [A description of the operations in general; from L. S. M. I.].—I. Tr. Rev. Sept. 16 1915; p 523; pp 2½; 25c.

Hayden, J. E.—*Fast Driving in a Michigan Iron Mine.* [A paper read before the L. S. M. I. on methods of blasting, cost, haulage and drilling].—M. & S. P. Dec. 11 1915; p 885; pp 2*; 20c.

Hayes, A. O.—*Wabana Iron Ore of Newfoundland.* [Treats on the chemistry, petrology and genesis of the deposits, which are hematite].—Canada Dept. of Mines Memoir 78; pp 163*.

Jones, C. C.—*The Pacific Coast Iron Situation; The Iron-Ores of California and Possibilities of Smelting.* [Treats on the geology and analysis of the ore,

together with prevailing conditions].—A. I. M. E. Bull. Sept. 1915; p 1887; pp 12*; 35c.

Kemp, J. F.—*The Geology of the Iron-Ore Deposits in and Near Daiquiri, Cuba.* [The mineralogy, geology of the formation, petrology, and ore genesis are brought out].—A. I. M. E. Bull. Sept. 1915; p 1801; pp 36*; 35c.

Leith, C. K.; Mead, W. J.—*Additional Data on Origin of Lateritic Iron in Cuba.* [Gives chemical data and discussion showing how the iron ore deposits of Moa district were formed by chemical alteration and secondary deposition].—A. I. M. E. July 1915; p 1377; pp 4*; 35c.

McCarty, E. P.—*Manganiferous Iron Ores of the Cuyuna Range.* [A general review of the ore, its foreign contents, production and places and extent of occurrence].—F. & M. J. Sept. 4, 1915; p 400; pp 2; 25c.

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McDonald, P. B.—*Newfoundland Iron Mines.* [A synopsis of prevailing conditions in the district].—Canadian Mg. Jnl. Sept. 15 1915; p 554; pp 1¼; 35c.

McDonald, P. B.—*Sinking a Shaft.* [Concrete shaft linings and sinking in quicksand are the principles for review. The practice is that found in the iron country of Michigan].—Canadian Mg. Jnl. Sept 1 1915; p 524; pp 2*; 35c.

McIntosh, F. K.—*Shaft Sinking in a Michigan Iron Mine.* [Gives a method of procedure with some costs where a pentice is not used].—Mg. World Dec. 11 1915; p 933; pp 1¾*; 10c.

Miller, W. G.; Knight, C. W.—*Pre-Cambrian Ore Deposits in Ontario.* [An economic geological treatise on the formation holding the nickel, cobalt, silver, gold, iron and copper deposits in the province. From the Royal Soc. of Canada].—M. & S. P. Sept. 11 1915; p 401; pp 3½*; 20c.

Olson, O. E.; Schaus, O.; Blackwell, F.—*Mining Methods on the Gogebic Range, Minnesota.* [Top slicing and sub-level methods are used in soft ore and back stoping in the harder and more solid ores. A paper read before the L. S. M. I.].—I. Tr. Rev. Oct. 14 1915; p 735; pp 3*; 25c.

Pratt, W. E.—*Iron Ore on Calambayanga Island, Mambulao, Camarines, P. I.* [The genesis and in general regarding the deposits].—Phil. Jnl. of Sci. Sept. 1915; p 323; pp 11*.

Raefler, F.—*Die Brauneisenerzlagerstätten Oberschlesiens.* [The hematite deposits in Silesia, Germany].—Glückauf June 26 1915; p 637; pp 2½; 50c.

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Rogers, R. F.—*The Iron Ore Deposits of Lewis County, Tennessee.* [A description of the geological formation and ore genesis with the mines and prospects described separately].—Resources of Tenn. July 1915; p 91; pp 56*.

Romero, C. L.—*Algo Sobre Asfaltos Vanadiferos.* [Something about the asphalt and vanadium-iron deposits in Peru and elsewhere, dealing with the location and importance of the deposits].—Inf. y Mem. Soc. Ing. Peru Aug. 1915; p 297; pp 11; 75c.

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Roush, G. A.—*The Mineral Industry, Its Statistics, Technology and Trade During* 1914. [The production and general current conditions of the market are discussed and in many instances information is given regarding methods of operation in the industry. There are special chapters among which is one on flotation].—McGraw-Hill Vol XXII; pp 998; $10.

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per, lead, gold, tungsten, iron, coal, petroleum and their associates. After the facts are revealed a general discussion of the situation is taken up].—Mg. World July 10 1915; p 58; pp 7; 10c.

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amount of heat available from 1 lb. of coke at the hearth and later submitted to the charge].—Met. & Chem. Engg. Nov. 1 1915; p 787; pp 5*; 20c.

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——— *Blast Furnace Tapping Machine.* [A successful machine now in operation at Youngstown, Ohio].—I. Tr. Rev. Aug. 12 1915; p 321; pp 2*; 25c.

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Burman, B. F.—*Efficiency of the Blast Furnace Operation.* [Tabulated data is given and considerable theory is propounded on the operation of the blast, the chemical part being left out].—Met. & Chem. Engg. Sept. 15 1915; p 524; pp 5; 30c.

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ment of ores and shows how cost can be cut in transporting them for some distance].—Canadian Mg. Jnl. Oct. 15 1915; p 629; pp 1¾; 35c.

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Chemical and Other Tests of Ores and Metals

Ayers, J. G., Jr.—*Decarburization in Heat Treated Steels.* [Brings forth a method of determining the carbon con-

tent in steel by use of the microscope instead of analysis and further revealing the nature in which the carbon exists].—Iron Age July 1 1915; p 5; pp 2*; 30c.

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Camp, J. M.—*Analysis of Alloy Steels.* [The methods described are those being given use at the present by the U. S. Steel Corporation].—Carnegie Steel Co.; pp 70*; $1.

Evans, G. S.—*Testing the Hardness of Iron Castings.* [A method of determining the hardness of chilled and gray iron castings by use of a ball impression; also the relation of hardness to the strength and properties of the castings].—Iron Age July 1 1915; p 8; pp 2½*; 30c.

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Lynch, T. D.—*Fixing the Elastic Limit Standard.* [The results of tests are herein given with discussion on the topic of a more closely standardized meaning of elastic limit which now has various interpretations. It also shows from tests with the extensometer that commercial tests could be considerably more accurate than at the present time].—Iron Tr. Rev. July 8 1915; p 79; pp 3*; 25c.

Pickard, J. A.—*Modern Steel Analysis.* [For students and young works chemists].—Churchill London; $1.25.

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Szasz, Ernst.—*Ein Rasches und Genaues Verfahren zur Bestimmung des Kohlenstoffs in Eisen und Eisen Legierungen.* [A method of analysis for determining carbon in iron and its derivatives].—Chemiker Ztg. June 26 1915; p 482; pp 2*; 35c.

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with various amounts of scrap].—I. Tr. Rev. July 29 1915; p 221; pp 2½*; 25c.

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Plants, Production and Products

Abbott, Robert M.—*Comparison of Heat Treated Steel.* [Contains curves and description regarding the properties of steel which are affected by the introduction of nickel, carbon or manganese. Such properties as elasticity, elongation, reduction area, hardness and ductility are taken up in detail].—Iron Tr. Rev. July 1 1915; p 22; pp 2*; 25c.

Abbott, R. R.—*Heat Treatment of Modern Steels.* [Tells of the effects heat has on their structure, composition and crystallization].—I. Tr. Rev. Nov. 18 1915; p 981; pp 5½*; 5c.

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Estep, H. Cole—*A Modern Plant for Rolling Iron.* [In general is a description of the works of the St. Louis Screw Co., where special provision is made for cleaning and tumbling scrap. Sectional drawings and illustrations are shown. Powdered coal is used as fuel].—Iron Tr. Rev. July 8 1915; p 83; pp 8*; 25c.

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Langenberg, F. C.; Webber, R. G.—*Effect of Hysteresis on Mild Steel.* [A study on the effect of the micro-structure on the magnetic properties of mild steel for armatures, etc.].—I. Tr. Rev. Sept. 23 1915; p 576; pp 2*; 25c.

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Muntz, G.—*Finding Costs in the Steel Foundry.* [A method for determining selling prices and general operation costs].—I. Tr. Rev. Sept. 9 1915; p 482; pp 2½; 25c.

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Touceda, E.—*Phosphorus Limit in Malleable Castings.* [A paper read before the American Foundrymen's Assn. showing that with 0.2% of phosphorus it is four times as hard to break a test bar as with one containing 0.4%].—Foundry Nov. 1915; p 446; pp 3*; 35c. I. Tr. Rev. Sept. 30, 1915; p 634; pp 3*; 25c.

Uhler, J. L.—*Dynamic Properties of Cast Steel.* [Impact tests are considered of equal importance to fatigue tests].—I. Tr. Rev. Sept. 30 1915; p 630; pp 3*; 25c.

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Vanderhoof, H.—*Development of the Canadian Iron and Steel Industry.* [A review of conditions predicting Port Arthur, Ont., to be a greater center.—Mg. World Dec. 25 1915; p 1009; pp 2½*; 10c.

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——— *Gemeinfassliche Darstellung des Eisenhüttenwesens.* [A review of the production of foundry iron-products and a description of their method of manufacture].—Verein Deutscher Eisenhüttenleute; pp 438; $1.65.

——— *Importance of Annealing Steel Castings.* [Curves and discussion on the subject].—Iron Age July 15 1915; p 128; pp 2½*; 30c.

——— *Iron and Steel Institute.* [Consists for the most part of a paper on the occurrence and influence of nitrogen on iron and steel].—I. & C. Tr. Rev. Oct. 1 1915; p 415; pp 1½*; 35c.

——— *Large Oil Extractor for Bessemer Converter Turbo-Blower Plant.* [In operation at the Barrow Hematite Co., Ltd., England].—I. & C. Tr. Rev. July 23, 1915; p 101; pp 1*; 35c.

——— *Phosphorus Limit in Malleable Castings.* [Tells that more phosphorus is sometimes beneficial, gives dynamic tests and speaks of unsoundness from shrinkage].—Iron Age Oct. 21 1915; p 924; pp 2*; 30c.

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Lohse, U.—*Die Sandaufbereitungsvorrichtungen der Vereinigten Schmirgel und Maschinenfabriken, Hannover-Hainholz.* [The methods used in the care and preparation of molding sand at Hannover, Germany. Also tells of the methods used for molding the sand by both hand and machine].—Giesserei Ztg. July 15 1915; p 209; pp 6*; Sept. 1 1915; p 257; pp 7*; 70c.

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Pradel, Ing.—*Neuerungen im Formmaschinenbau und Giessereibetrieb.* [Casting and other new machines for the foundry and metallurgical plant].—Giesserei Ztg. Nov. 15 1915; p 344; pp 3*; 35c.

Stromboli, A.—*L'industria Siderurgica Nazionale alla Prova del Fuoco.* [The smelting and foundry practice as followed in Italy].—Metallurgia. Ital. July 31 1915; p 420; pp 21; $1.

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——— *A Uniform Basis for Figuring Foundry Costs.* [An outline of a system for figuring costs on all classes of work and is in full the report of the Cost Committee of the American Foundrymen's Assn.].—Iron Age Nov. 11 1915; p 1118; pp 2½; 30c.

——— *Commercial Problems of the Foundry.* [Abst. from "Principles of Iron Founding" by Dr. Moldenke].—Iron Age Sept. 23 1915; p 707; pp 3; 30c.

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Millholland, R. A.—*Case-Hardening Retorts and Furnaces.* [Precautions to be observed in packing, materials for case-hardening and description of furnaces].—Iron Age Nov. 11 1915; p 1111; pp 3*; 30c.

Mills, A. P.—*Materials of Construction, Their Manufacture, Properties and Uses.* [Includes concrete, steel and iron, alloys, timber, etc.].—Wiley & Son; pp 658*; $4.50.

Noland, Lloyd.—*Welfare Work of the Tennessee Coal, Iron & Railroad Co.*—I. Tr. Rev. Aug. 19 1915; p 356; pp 2½; 25c.

Pearl, H. I.; Green, Joe.—*Electrical Plant of the Wakefield Iron Co., Mich.* [Supplies 2 shafts. Turbo-generators provided with overload device to take up peak loads].—E. & M. J. Aug. 28 1915; p 349; pp 2¾*; 25c.

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Sargent, G. W.—*Contributions of the Chemist to the Steel Industry.* [A general talk on the manufacture of steel].—Jnl. of Ind. & Chem. Engg. Nov. 1915; p 932; pp 2; 60c.

Sauveur, A.—*The Metallography of Iron and Steel.* [Takes up apparatus used in the study and results obtained from study].—Sauveur & Boyleton, Cambridge, Mass.; $5.

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Swinden, Thomas.—*Drop Forging and the Automobile Industry.* [Gives the effects of foreign elements and improper treatment].—Engg. Rev. July 15 1915; p 7; pp 2¾; 35c.

Willoughby, A. A.—*Accident Prevention by the Steel Corporation.* [A report from the U. S. Steel Corporation showing expenditures and results].—M. & S. P. July 17 1915; p 82; pp 1; 20c.

Wilson, L. C.—*The Corrosion of Iron.* [A summary of causes and preventives].—Engg. Mag. Co.; pp 178*; book; $2.

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——— *American Iron and Steel Institute, Cleveland Meeting.* [Oct. 19-22, 1915].—Iron Age Oct. 28 1915; p 984; pp 6½*; 30c.

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——— *Meeting of the American Iron and Steel Institute.*—I. Tr. Rev. Oct. 28 1915; p 846; pp 2½*; 25c.

——— *Position and Prospects of the Australian Iron and Steel Industry.*—I. & C. Tr. Rev. Sept. 10 1915; p 305; pp 3; 35c.

——— *Representacion Grafica de las Tarifas Ferroviarias.* [Tells of transportation rates, tariffs made by the state and railroads, giving a graphic representation of the same..—Inf. y Mem. Soc. Ing. Peru Aug. 1915; p 289; p 8*; 75c.

——— *The Iron and Steel Trade in* 1915. [A review of the subject for England by districts, giving process, production and wages, with a discussion of the features which affected the trade].—I. & C. Tr. Rev. Dec. 31 1915; p 804; pp 6½; 35c.

CHAPTER VI.

Alloys, Antimony, Manganese, Molybdenum, Tungsten, Etc.

ALLOYS

Bogitch, M. B.—*Sur La Solubilité Récproque du Cuvre et Du Plomb.* [On the metallographic structure of brass alloys].—Metallurgie July 1915; p 655; pp 2*; 35c.

Camp, J. M.—*Analysis of Alloy Steels.* [The methods described are those being given use at the present by the U. S. Steel Corporation].—Carnegie Steel Co.; pp 70*; $1.

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——— *Annan River Tinfield, North Queensland, Australia.* [Takes the subject from an economic view on tin, tungsten, molybdenum, silica and other miscellaneous ores].—Queen, Govt. Mg. Jnl. Nov. 15 1915; p 553; pp 6*; 35c.

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Turner, F. M., Jr.—*Vanadium: Its Chemical and Metallurgical Technology.* [The center of operations are in the tropics. History, occurrence, mineralogy, uses, etc., are taken up].—Canadian Mg. Jnl. Aug. 1 1915; p 457; pp 4*; 35c.

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CHAPTER VII.

Tin, Nickel, Cobalt, Aluminum.

TIN

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Brown, G. E.—*Prospecting in the Eastern Tropics.* [Reviews the various things to be encountered in the East Indies and Malay States].—Mg. Mag. July 1915; p 28; pp 5*; 50c.

Brown, G. E.—*Visiting the Hunan Tinfields, China.* [Takes up the history of the country and its means of transportation].—Mg. Mag. Sept. 1915; p 141; pp 5*; 50c.

Bullock, S. C.—*A Trip Through Bolivia.* [A review of things seen and experiences encountered in the country giving information regarding traveling accommodations].—E. & M. J. Sept. 11, 1915; p 421; pp 3½*; 25c.

Burgess, G. K.; Merica, P. D.—*An Investigation of Fusible Tin Boiler Plugs.*—U. S. Bur. of Stand. Tech. Paper No. 53; pp 37*.

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Earl, T. C.—*The Testing of Alluvials.* [An account of the author's own experience in prospecting methods for testing and proving up alluvial deposits of tin and gold].—Mg. Jnl. London; book; $1.75.

Fraulob, Ing.—*Der Erzbergbau und das Metallhüttenwesen in China, mit besonderer Berücksichtigung der Zinngewinnung in der Provinz Yünnan.* [Tin mining and smelting in Yunnan, China, where underground mining and thermic methods of smelting are employed].—Metal & Erz Nov. 22 1915; p 459; pp 5½; Dec. 8; p 479; pp 10½*; 70c.

James, W. H. T.—*Losses in Tin Recovery.* [A paper read before the Royal Polytechnic in which the losses in crushing and concentration are brought out].—S. Afr. Mg. Jnl. Oct. 2 1915; p 101; pp 1¼; 35c.

Jones, W. R.—*Mineralization in Malaya.* [Tin occurs here in lode mines as well as alluvial deposits].—Mg. Mag. Oct. 1915; p 195; pp 7½*; 50c.

Levings, J. H.—*Notes on the Treatment of Stannite Ore at Zeehan, Tas., Australia.*—Proc. Aus. Inst. of M. E. N. S. No. 9 1915; p 183; pp 6; 70c.

Lincoln, F. C.—*The Potosi Tin Mining District, Bolivia.* [Reviews the people, geography and geology; mining, milling and smelting, with costs and description of the operations].—M. & S. P. July 24 1915; p 127; pp 3*; 20c.

Lincoln, F. Church.—*Tin Mining Conditions in Bolivia.* [A treatise on the history, production and geography of the country].—Mexican Mg. Jnl. March 1915; p 86; pp 2*; 35c.

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Saint-Smith, E. C.—*Annan Tinfield,* Cooktown District, North Queensland, Australia. [The main part is on the structural and economic geology and mineralogy of the district].—Queen. Gov. Mg. Jnl. Aug. 14 1915; p 376; pp 14*; Sept. 15 1915; p 432; pp 16*; Oct. 15 1915; p 488; pp 15*; Nov. 15 1915; p 553; pp 6*; $1.40.

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Wright, Charles Will.—*Geology and Ore Deposits of Copper Mountain and Kasaan Peninsula, Alaska.* [Describes the formation and geology first in a general way later taking it up in a more restricted manner as regards particular districts, deposits and mines. The nature of the ore is given as well as that of its deposition. Minerals found are copper ores, gold, magnetite and tin sulphide].—U. S. G. S. Prof. Paper 87; pp 110*.

——— *Annual Report of the South African Mines Department for* 1914. [Reviews the mining industry of copper, tin, gold, gems and coal, giving figures on their respective productions].—S. Afr. Mines Dept.

——— *Base Metal Prospects in South-West Africa.* [Treats on the possibility of copper, lead and tin deposits being in this vicinity and of economic value].—S. Afr. Mg. Jnl. May 29 1915; p 309; pp 1; 35c.

——— *Copy of a Contract for Tin Ores Between European Smelters and Bolivian Miners.*—M. & S. P. July 31 1915; p 175; pp 2; 20c.

——— *Facts Bearing Upon the Production and Marketing of Metals in Australia.* [Describes the ways by which and the places at which Australia's mineral wealth is disposed of].—Mg. & Engg. Rev. Sept. 6 1915; p 295; pp 2¼; 35c.

——— *Mining Prospects in German South-West Africa.* [A review of the mineral resources of the country].—Queen. Govt. Mg. Jnl. Aug. 14 1915; p 397; pp 1; 35c.

——— *Mining Prospects in German Southwest Africa.* [Tells of the diamond, copper, tin and coal prospects].—South Afr. Mg. Jnl. June 12 1915; p 359; pp 1½; 35c.

——— *Mining Statistics for the Union of South Africa for September,* 1915.—S. Afr. Engg. Nov. 1915; p 86; pp ⅔; 35c.

——— *Northern Nigeria Tin Industry.* [Abst. from British government inspector's report, giving details on the production of the province].—Mg. Jnl. Dec. 25 1915; p 885; pp 1½; 35c.

——— *Queensland Mineral Production in* 1914.—Mg. Jnl. Oct. 2 1915; p 693; pp 2; 35c.

——— *South Africa's Outlook.* [Deals with the production of their tin, copper, gold, gems, etc.].—Mg. Jnl. Sept. 18 1915; p 663; pp 2; 35c.

——— *Tasmania in* 1914. [The mineral production from the state consisting of gold, silver, tin, copper, coal, etc.].—Mg. Jnl. Oct. 30 1915; p 751; pp 1½; 35c.

——— *Tin Mining in Alaska.* [Abst. from U. S. G. S. Bull. 622-B. The metal is found in the York, Buck Creek and Hot Springs districts. Prospecting for lode tin is also briefly described].—E. & M. J. Nov. 20 1915; p 838; pp 1½*; 25c.

NICKEL

Abbott, Robert M.—*Comparison of Heat Treated Steel.* [Contains curves and description regarding the properties of steel which are effected by the introduction of nickel, carbon or manganese. Such properties as elasticity, elongation, reduction area, hardness and ductility are taken up in detail].—Iron Tr. Rev. July 1 1915; p 22; pp 2*; 25c.

Döring, T.—*Fortschritte auf dem Gebiete der Metallanalyse im Jahre* 1914. [A brief review of the iron, platinum, nickel, cobalt and alloy industry].—Chem. Ztg. Sept. 29 1915; p 734; pp 3½; 35c.

Howe, Ernest.—*Sulphide-Bearing Rocks from Litchfield, Conn.* [Describes the minerals and rocks which contain nickel-copper sulphides and are located in the vicinity of Prospect Hill. The deposits are too low to be of economic value].—Econ. Geol. June 1915; p 330; pp 18*; 60c.

Irmann, R.—*Uber den Einflutz des Wolframs auf Nickel.* [Treats on metallographic, thermic, electrical tests on the influence of wolfram on nickel].—Metall & Erz Sept. 8 1915; p 358; pp 7*; 50c.

Knittel, C. A.—*The Determination of Cobalt and Nickel in Cobalt Metal.* [The method has been used by the Coniagas Reduction Co. checking duplicates within 0.02%].—Canadian Mg. Jnl. Oct. 1 1915; p 597; pp 1¼; 35c.

Manz, H.—*Ueber die Röstung von Kupfernickelerzen.* [The roasting and chlorination of copper-nickel ores].—Chem. Ztg. Sept. 15 1915; p 693; pp 2; 35c.

Miller, W. G.; Knight, C. W.—*Pre-Cambrian Ore Deposits in Ontario.* [An economic geological treatise on the formation holding the nickel, cobalt, silver, gold, iron and copper deposits in the

province; from the Royal Soc. of Canada].—M. & S. P. Sept. 11 1915; p 401; pp 3½*; 20c.

Stören, R.—*Beobachtungen beim Pyritschmelzen.* [A review in German of pyrite smelting].—Metall & Erz June 22 1915; p 241; pp 9½*; 50c.

Wagenmann, Karl.—*Beitrag zur Quantitativen Bestimmung des Nickels mit Dimethylglyoxin.* [Gives a method of quantitative analysis for nickel and its compounds].—Ferrum June 1915; p 126; pp 3; 75c.

Walker, T. L.—*Certain Mineral Occurrences in the Worthington Mine, Sudbury, Ontario, and Their Significance.* [The mineral is nickel-copper in norite or diorite rock].—Economic Geol. Oct. 1915; p 536; pp 7*; 60c.

——— *Mining Conditions in Ontario for Six Months Ending June* 30 1915. [The production, etc., of gold, silver, nickel, copper and molybdenite].—Mg. World Oct. 9 1915; p 571; pp 1; 10c.

COBALT.

Döring, T.—*Fortschritte auf dem Gebiete der Metallanalyse im Jahre* 1914. [A brief review of the iron, platinum, nickel, cobalt and alloy industry].—Chem. Ztg. Sept. 29 1915; p 734; pp 3½; 35c.

Kalmus, H. T.—*Electro-Plating with Cobalt.* [A number of tests run with cobalt and its alloys at Queens Univ., Canada].—Canada Dept. of Mines No. 334; pp 89*.

Knittel, C. A.—*The Determination of Cobalt and Nickel in Cobalt Metal.* [The method has been used by the Coniagas Reduction Co. checking duplicates within 0.02%].—Canadian Mg. Jnl. Oct. 1 1915; p 597; pp 1¼; 35c.

Vickers, C.—*Transactions of the American Institute of Metals.* [A compilation of papers read at various meetings, on the base metal industry].—Amer. Inst. of Metals; pp 394*; $5.

ALUMINUM

Comstock, Geo. F.—*Alumina in Steel.* [A micrographic study of the effects of the metal in steel].—Met. & Chem. Engg. Dec. 1 1915; p 891; pp 4¼*; 35c.

Corse, W. M.—*Properties of Aluminum Bronze Alloys.* [A paper read before the American Inst. of Metals].—Foundry Nov. 1915; p 459; pp 2*; 35c; I. Tr. Rev. Dec. 9 1915; p 1137; pp 2*; 25c.

Döring, T.—*Fortschritte auf dem Gebeite der Metallanalyse im Jahre* 1914. [A general review of the copper, mercury, aluminum, lead, arsenic, antimony and manganese industries].—Chem. Ztg. Sept. 25 1915; p 725; pp 2¼; 35c.

Gillett, H. W.—*How Aluminum Chips Are Recovered by Melting.* [A paper read before the American Inst. of Metals.—Foundry Nov. 1915; p 462; pp 1½; 35c; I. Tr. Rev. Nov. 11 1915; p 942; pp 1½; 25c.

Minnig, H. D.—*The Separation and Estimation of Aluminum and Beryllium by the Use of Acetyl Chloride in Acetone.*—Amer. Jnl. of Sci. Nov. 1915; p 482; pp 3½; 60c.

Phalen, W. C.—*The Production of Aluminum and Bauxite in* 1914. [Treats on processes used in refining aluminum and gives figures on the production of the mineral and metal].—Min. Res. of U. S. I: 7; pp 27*.

Richards, J. W.—*Electrical Applications of Aluminum.*—Jnl. of Elect. Power & Gas Oct. 9 1915; p 288; pp 1; 35c.

Roush, G. A.—*The Mineral Industry, Its Statistics, Technology and Trade During* 1914. [The production and general current conditions of the market are discussed and in many instances information is given regarding methods of operation in the industry. There are special chapters among which is one on flotation].—McGraw-Hill Vol XXII; pp 998; $10.

Vickers, C.—*How Titanium-Aluminum-Bronze is Produced.* [Shows how the alloy is compounded, melted and cast, with details as to its constituents. Description is also given of the foundry departments, chemical and testing laboratories].—Foundry July 1915; p 273; pp 5½*; 25c.

——— *Electro-Metallurgy of Aluminum in the West.* [Bauxite is the mineral from which the metal is extracted by electrolysis. Costs of material and operations are also given here].—Mg. World Aug. 7 1915; p 219; pp 2½; 10c.

——— *Recent Developments in the Use of Electricity in Metallurgy.* [Abst. from a paper read before the Engg. Club of Philadelphia giving some uses of electricity in iron and aluminum refining as well as its use in a general way].—Mexican Mg. Jnl. Sept. 1915; p 316; pp 5; 35c.

CHAPTER VIII.

Miscellaneous Metals and Ores.

MERCURY

Bradley, W. W.—*Mines and Mineral Resources of Colusa, Glenn, Lake, Marin, Napa, Solano, Sonoma and Yola Counties, Cal.* [Building materials, sulphur, magnesite and gravel are produced. Synopses on the deposits and equipment of companies, with figures on production of the minerals are given].—Cal. State Mg. Bur.; pp 208*.

Brooks, A. H., and Others.—*Mineral Resources of Alaska, Report on Progress of Investigations in* 1914. [Contains discussions and descriptions on the gold, copper, tin, mercury and iron deposits in Alaska].—U. S. G. S. Bull. 622; pp 380*.

Döring, T.—*Fortschritte auf dem Gebeite der Metallanalyse im Jahre* 1914. [A general review of the copper, mercury, aluminum, lead, arsenic, antimony and manganese industries..—Chem. Ztg. Sept. 25 1915; p 725; pp 2¼; 35c.

Juretzka, Franz.—*Die Verarbeitung Quecksilberhaltiger Nebenmaterialen im Zinkhüttenbetriebe.* [The zinc blende from Unterdevon contains mercury and the article tells of its extraction in smelting].—Metall & Erz Aug. 8, 1915; p 307; pp 4*; 50c.

Knopf, A.—*Some Cinnabar Deposits in Western Nevada.* [Deals with the geological, historical, prospecting and other features of the district].—U. S. G. S. Bull. 620-D; pp 10.

McCaskey, H. D.—*Quicksilver in* 1914. [Information on the production and condition of the general trade, telling of the places in which it is found and in such cases giving the amount produced].—Min. Res. of U. S. I:11; pp 18.

Phillips, W. B.—*Mineral Resources of Texas.* [Contains statistics on production, discussion of the counties and mining laws of the state].—Univ. of Texas Bull. 365; pp 320*.

Pilz, A.—*Das Zinnobervorkommen von Idria in Krain unter Berücksichtigung neuerer Aufschlüsse.* [The cinnabar deposits of Idria in Spain with respect to the newer deposits].—Glückauf Oct. 30 1915; p 1057; pp 9½*; Nov. 6; p 1081; pp 90½*; Nov. 13 1915; p 1105; pp 5; $1.50.

Ransome, F. L.—*Quicksilver Deposits of the Mazatzal Range, Ariz.* [Describes the geology and genesis].—U. S. G. S. Bull. 620-F; pp 18*.

Sharwood, W. J.—*The Determination of Mercury in Cyanide Solutions and Precipitate.* [Based on the vaporization of mercury oxide and its later condensation].—M. & S. P. Oct. 30 1915; p 663; pp 2¼; 20c.

Smith, George Otis.—*Mid-Year Review of Mining Industry, 1915.* [Takes up the various metals separately giving their current production, quality and prices current. The metals taken are those of copper, lead, gold, tungsten, iron, coal, petroleum and their associates. After the facts are revealed a general discussion of the situation is taken up].—Mg World July 10 1915; p 58; pp 7; 10c.

——— *Primary Mercurial Resistance Standards.*—Mg. World Nov. 27 1915; p 856; pp ½; 10c.

RADIUM AND RADIOACTIVES

Bastin, E. S.—*Ores of Gilpin County, Colorado.* [On the economic geology of the ores, covering the mineralogy and ore genesis].—Economic Geol. May 1915; p 262; pp 34*; 60c.

Kotze, R. N.—*Radio-Active Minerals in South Africa.* [A discussion on W. A. Rogers' paper read before the Geological Soc. of S. Afr.].—S. Afr. Mg. Jnl. July 10 1915; p 451; pp 1; 35c.

Lind, S. C.—*Practical Methods for the Determination of Radium.* [Abst. from a U. S. Bur. of Mines paper on the emanation method].—Jnl. Ind. & Chem. Engg. Dec. 1915; p 1024; pp 5*; 60c.

Parsons, C. L.; Moore, R. B.; Lind, S. C.; Schaefer, O. C.—*Extraction and Recovery of Radium, Uranium and Vanadium from Carnotite.* [Both hydrometallurgical and thermic methods are used].—U. S. Bur. of Mines Bull. 104; pp 124*.

Pietrusky, K.—*Die Uran und Radiumgewinnung in den Vereinigten Staaten.* [A review of the uranium and radium ore deposits].—Glückauf July 31 1915; p 749; pp 6½; 50c.

SELENIUM

Smith, W.—*Estimation of Selenum in Sulphur.* [The principle is that selenium and sulphur bromides break up on the

addition of cold water].—Jnl. Industrial & Chem. Engg. Oct. 1915; p 849; pp 1; 60c.

THORIUM

Kithil, K. L.—*Monazite, Thorium and Mesothorium.* [The manufacture of thorium and mesothorium from monazite in United States is possible and the location of deposits and method of manufacture are here given].—Bureau of Mines Tech. Paper 110; pp 32.

MISCELLANEOUS ORES AND METALS (Unclassified)

Baidy, T. F.—*The Electric Furnace for Reheating, Heat Treating and Annealing.* [A paper read before the Eng. Soc. of West. Pa.].—Met. & Chem. Engg. Sept. 1 1915; p 558; pp 6; 30c.

Beckman, J. W.—*The Electro-Chemical Possibilities of the Pacific Coast.* [A paper read before the American Electro-Chemical Soc., telling of the raw materials to be had, the power available, and various costs].—Chem. Eng. Oct. 1915; p 136; pp 4½; 35c.

Benson, H. K.—*The Industrial Resources and Opportunities of the Northwest United States.* [From the proceedings of the American Chem. Soc.].—Met. & Chem. Engg. Sept. 1915; p 587; pp 2; 30c.

Brinsmade, R. B.—*The Natural Taxation of Mineral Land.* [Discusses the subject from different points of view].—M. & S. P. Oct. 30 1915; p 674; pp 5; 20c.

Brooks, A. H.—*Mineral Resources of Alaska.* [A report in separate articles of the progress of economical importance in the various fields of the territory during 1914].—U. S. G. S. Bull. 622; pp 380*.

Broughton, H. H.—*The Electric Crane Applied to the Handling of Coal and Ore.* [Details of electric cranes, etc., for handling mine stock piles].—Elect. July 23 1915; p 575; pp 4*; 35c.

Crampton, F. A.—*Platinum Assaying at the Boss Mine, Goodsprings, Nevada.* [A method by which gold, copper, platinum and paladium can be run in one day].—M. & S. P. Aug. 14, 1915; p 231; pp 2; 20c.

Czorchralski, J.—*Die Warmebehandlung der Metalle.* [The handling and treatment of hot metals].—Giesserei Ztg. Oct. 1 1915; p 289; pp 4*; 35c.

Dole, R. B.—*The Production of Mineral Waters in* 1914, *with a Sketch of the Trade.*—Mineral Res. of U. S. 11:15; pp 45.

Dunlop, J. P.—*Recovery of Secondary Metals in* 1914. [Specifications for the various classes of metals, with discussion of the industry and production figures].—Mineral Res. of U. S. I:2; pp 9. Mg. World July 31 1915; p 176; pp 2; 10c.

Dunlop, J. P.—*The Production of Metals and Ores in* 1913 *and* 1914. [Reviews the production for the nation as a whole].—Min. Res. of U. S. I:14; pp 11.

Edwards, C. A.—*Metallic Crystal Twinning by Direct Mechanical Strain.* [A paper read before the Institute of Metals].—Engg. Oct. 15 1915; p 407; pp 3*; 35c.

Fulton, C. H.—*The Buying and Selling of Ores and Metallurgical Products.* [Reviews the general practice and prices prevailing between the mine, mill and smelter].—Bur. of Mines Tech. Paper 83; pp 43.

George, H. C.—*The Wisconsin Zinc District.* [Roasting and magnetic separation are practiced but tables do not follow the jigs in concentration].—E. & M. J. Sept. 4 1915; p 385; pp 4*; 25c.

Grammer, F. L.—*Heating as a Phase of Ore Treatment.* [Discusses the heat treatment of ores and shows how cost can be cut in transporting them for some distance].—Canadian Mg. Jnl. Oct. 15 1915; p 629; pp 1¾; 35c.

Hill, J. M.—*The Production of Barytes in* 1914. [Notes on the occurrence, use and production with notes on strontium].—Mineral Resources U. S. II:6; pp 6.

Ingalls, W. R.; Douglas, J.; Finlay, J. R.; Channing, J. P.; Hammond, J. H.—*Rules and Regulations for Metal Mines,* [Rules to regulate the operation in and inspection of mines and quarries in the various mining states].—U. S. Bur. of Mines Bull. 75; pp 296.

Irmann, R.—*Ueber den Einflutz des Wolframs auf Nickel.* [Treats on metallographic, thermic, electrical tests on the influence of wolfram on nickel].—Metall & Erz Sept. 8 1915; p 358; pp 7*; 50c.

Jeffries, Z.; Kline, A. H.; Zimmer, E. B.—*The Determination of Grain Size in Metals.* [An account of tests and how the size of the composing grains effect the properties].—A. I. M. E. Bull. Dec. 1915; p 2359; pp 12*; 35c.

Kithil, K. L.—*Monazite, Thorium and Mesothorium.* [The manufacture of thorium and mesothorium from monazite in United States is possible and the location of deposits and method of manu-

facture are here given].—Bureau of Mines Tech. Paper 110; pp 32.

Klugh, B. G.—*Mechanical Progress of Sintering.* [On the sintering of iron-bearing material for reclaiming low-grade ores.]—I. Tr. Rev. Oct. 28 1915; p 835; pp 4½*; 25c.

Knopf, Adolph.—*A Gold-Platinum-Palladium Lode in Southern Nevada.* [Deals principally with the Boss mine, giving the geology, character of the ore, genesis, occurrence and other details].—U. S. G. S. Bull. 620-A; pp 18*.

Minnig, H. D.—*The Separation and Estimation of Aluminum and Beryllium by the Use of Acetyl Chloride in Acetone.*—Amer. Jnl. of Sci. Nov. 1915; p 482; pp 3½; 60c.

Oebbeke, K.—*Die Volkswirtschaftliche Bedeutung der Mineralischen Bodenschätze.* [The production and ore reserves of the government-owned islands in Germany]. — Montanist Rundschau Aug. 1 1915; p 534; pp 11; 35c.

Rickard, T. A.—*The Valuation of Metal Mines.* [A paper presented at the International Engineering Congress].—M. & S. P. Oct. 9 1915; p 548; pp 5½; 20c.

Roush, G. A.—*The Mineral Industry, Its Statistics, Technology and Trade During* 1914. [The production and general current conditions of the market are discussed and in many instances information is given regarding methods of operation in the industry. There are special chapters among which is one on flotation].—McGraw-Hill Vol XXII; pp 998; $10.

Skillman, V.—*Brinell Hardness Testing of Nonferrous Alloys.* [Paper presented at the American Fdy. Assn.].—Chem. Eng. Aug. 1915; p 57; pp 2; 35c.

——— *Facts Bearing Upon the Production and Marketing of Metals in Australia.* [Describes the ways by which and the places at which Australia's mineral wealth is disposed of].—Mg. & Engg. Rev. Sept. 6 1915; p 295; pp 2¼; 35c.

——— *Froth and Flotation.* [A recognition of the importance of froth, by students in the Univ. of California].—M. & S. P. July 31 1915; p 160; pp 1¼; 20c.

——— *Metallurgy at the International Engineering Congress.* [Brief abstracts are given of the various papers read bearing on the material or operation under this division].—Met. & Chem. Engg. Oct. 15 1915; p 721; pp 8½; 30c.

——— *Methods of Analysis of Carbon Free Metals.* [Methods for chromium, titanium, tungsten, manganese, etc.].—Goldschmidt Thermit Co. N. Y.; pp 20.

——— *Minerals of Asiatic Turkey.* [An economic geological treatise on the partially worked deposits of Turkey].—E. & M. J. Oct. 30 1915; p 715; pp 2¾*; 25c.

——— *Mining in India.* [An account of mineral productions and industry in India].—Mg. Jnl. Dec. 4 1915; p 825; pp 1¾; 35c.

——— *Sull'Attuale Stato Dei Processi di Concentrazione dei Minerali per Galleggiamento.* [Describes the flotation process].—Rass. Mineraria. Sept. 15 1915; p 41; pp 3½; 35c.

——— *Wolfram Mining in Burma.* [The mining industry and regulations are here spoken of in general].—Mg. Jnl. July 24 1915; p 532; pp 3½; 35c.

NON-METALS.

CHAPTER IX.

Fuels and By-Products.

COAL

Coal Fields and Mining

Adams, G. F.—*Coal Mining in India in* 1914. [Abst. from the report of the Inspector of Mines, India].—Coll'y Guard. Oct. 29 1915; p 878; pp 1; 35c.

Andros, S. O.—*Coal Mining in Illinois.* [Gives a complete account of the history, quality of product, mining ventilation, timbering, blasting, etc.].—Univ. Ill. Bull. 13; pp 250*.

Black, James.—*Forming a Shaft Pillar in Thin Seams.* [A paper read before the Mg. Inst. Scotland].—I. & C. Tr. Rev. Dec. 17 1915; p 739; pp 1*; 35c.

Brackett, G. S.—*Comparative Costs of Operating.* [A comparison between electrical and hand methods].—Coll'y Eng. Oct. 1915; p 132; pp 2½*; 35c.

Burroughs, Wilbur Greeley. — *Coal Fields of South America.* [The tonnage of the coal bed reserves of Ecuador and Peru are here given with a brief description of the beds. Figures are also given regarding the production and importation of coal to those countries].—Coll'y Eng. July 1915; p 643; pp 1; Sept. 1915; p 72; pp 1½; Oct. 1915; p 153; pp 2; 90c.

Cornet, F. C.—*Proposed System of Longwall Mining in Panels.* [All haulage ways and airways are in solid coal].—Coal Age Oct. 9 1915; p 586; pp 1¾*; 20c.

Coxe, E. H.—*Successful Shoveling Machine.* [A machine for shoveling coal from the mine floor into the mine car].—Coal Age July 15 1915; p 86; pp 2*; 20c.

Dakin, W.—*Controlling Roof Weights.* [A paper read before the National Assn. of Colly. Mng., England, being confined to the mining of coal seams].—I. & C. Tr. Rev. Dec. 31 1915; p 812; pp 3*; 35c.

Dean, Samuel.—*Modern American Coal Mining Methods, with Some Comparisons.* [A paper read before the North of England Inst. M. Engrs. on haulage and coal cutting].—Coll'y Guard. Oct. 15 1915; p 777; pp 2*; 35c; Sci. & Art of Mg. Oct. 23 1915; p 121; pp 3; 35c.

Efsall, H. J.—*Insuring the Coal Supply.* [Speaks of various methods for stock-piling coal and the advantages of stocking so as to keep a more even market].—Coal Age Nov. 6 1915; p 749; pp 7*; 20c.

Evans, J. H.; George, Glen.—*Supporting Shaft Sides Through a Fault.* [From transactions of the Mg. & Geol. Inst. of India].—Coll'y Guard. Aug. 27 1915; p 418; pp 1*; 35c.

Ferey, M.—*The Influence of Atmospheric Electricity in Underground Workings.* [Is a paper contributed to the Société de l'Industrie. It describes the use of electricity for firing from the surface. This is done to avoid the danger of sudden outburst of gas. No picks are allowed to be used on the face of the working].—Coll'y Guard. June 25 1915; p. 1326; pp. 1*; 35c.

Galloway, R. E.—*Mining Opportunities in Kern County, California.* [Speaks of the gold, copper, coal, etc., which occur in the district].—Mg. & Oil Bull. Oct. 1915; p 274; pp 3½*; 25c.

Garrison, F. Lynwood.—*Mining Conditions in China.* [Is a brief review of the history of the Chinese people, the geography and topography of their country, the geology and coal deposits of the country and the many opportunities for engineers].—E. & M. J. July 3 1915; p 26; pp 2½; 25c.

Gibson, T. S.—*Proposal for Shaft Bottom Arrangements and Methods of Working in Deep Seams.* [Is a paper written by the president of the society on the problems which will be encountered in deep coal mines. It is suffixed with discussion of the paper regarding haulage and hoisting).—Trans. Mg. & Geol. Inst. of India March 1915; p. 98; pp. 9*; 60c.

Grady, W. H.—*Cost Factors in Coal Production.* [Efficient methods of operation and mining are taken up in detail with costs for various methods of mining].—I. & C. Tr. Rev. Aug. 20 1915; p 219; pp 4⅓*; 35c.

Gray, F. W.—*The Coal Trade in Nova Scotia During the First Half of* 1915. [On the production of companies and districts of the country].—Canadian Mg. Jnl. July 15 1915; p 433; pp 1; 35c.

Greer, G. E.—*Projection of a Panel Mine.* [A paper read before the W. Va. Mg. Inst. The system gives a large tonnage from a small working area, prevents squeezes and allows a good ventilating system].—Coal Age Dec. 25 1915; p 1061; pp 2*; 20c.

Haas, Frank.—*Coals of Eastern Kentucky.* [A paper read before the Kentucky Mg. Inst.]—C. Tr. Bull. Dec. 15 1915; p 32; pp 3¾; 25c.

Halbaum, H. W. G.—*The Winding Drums of Practice and Theory.* [A paper presented at the North of England Institute of Mining and Mechanical Engineers. Reviews various winding systems, drums and ropes in regard to their safety, economy and operation].—Coll'y. Guard. June 25 1915; p. 1323; pp. 2*; 35c.

Hall, R. D.—*Stresses in the Mine Roof.* [Analyzes stresses present in the roof of coal mines].—A. I. M. E. Bull. Sept. 1915; p 2013; pp 6*; 35c; Coal Age Sept. 18 1915; p 460; pp 3½*; 20c; C. Tr. Bull. Sept. 15 1915; p 27; pp 3; 25c.

Hyde, M. L.—*Correct Tipple Design*—[An imaginary and ideal tipple are described and compared].—Coal Age Sept. 25 1915; p 502; pp 4*; 20c.

Hyde, M. L.—*Modern Mine-Plant Design.* [An arrangement which is a decided departure from American practice, but which has many advantages].—Coal Age Nov. 6 1915; p 741; pp 5*; 20c.

Jacobs, E.—*Mineral Production of British Columbia.* [Notably on gold, silver and copper].—Canadian Mg. Inst. Bull. Sept. 1915; p 669; pp 4½; 35c.

Johnson, R. G.—*An Interesting New Pennsylvania Coal Mine.* [Confined to a general description of the property and the shaft with its hoisting machinery].—Coal Age Oct. 16 1915; p 631; pp 2*; 20c.

Jevons, H. S.—*The British Coal Trade.* [Discusses the trade and gives production figures on the subject, omitting technical expressions, etc.].—Trübner & Co., London; $2.

Kneeland, F. H.—*Large Stripping Operation.* [Unlike most operations this work is being done on a salvage basis. Eight cu. yds. of earth may be removed to obtain 1 cu. yd. of coal].—Coal Age Sept. 25 1915; p 497; pp 5*; 20c.

Levin, N. D.—*A Protective System for Coal Mines.* [A means for clearing dead-ends with canvas pipe and blowers, thus preventing explosions].—Coll'y Eng. Oct. 1915; p 135; pp 2*; 35c.

Lupton, C. T.—*The Orofino Coal Field, Clearwater, Lewis and Idaho Counties, Idaho.* [Describes prospects in the district and the general conditions of the country].—U. S. G. S. Bull. 621-I; pp 10*.

Martin, G. C.; Johnson, B. L.; Grant, U. S.—*Geology and Mineral Resources of Kenai Peninsula, Alaska.* [The deposits are mainly placer gold and coal accompanied with deposits of tin, molvbdenum and copper of lesser importance].—U. S. G. S. Bull. 587; pp 243*.

McBride, Richard.—*Annual Report of the Minister of Mines for the Year Ending Dec.* 31, 1914, *B. C.* [Details on the mining, milling, etc., of gold, copper, zinc, lead, silver, etc., in the province].—Bur. of Mines, Victoria, B. C.; pp 543*.

Mottram, T. H.—*Coal Mines Inspection in Great Britain in* 1914. [From the Mines Dept. report of the inspector].—Coll'y Guard. Sept. 3 1915; p 468; pp 2⅓; 35c.

Norman, Fred.—*Allegheny River Mining Co.'s Cadogan Mine, Pa.* [A method of working where three beds will be worked simultaneously. Methods for market preparation of the coal are also given].—Coal Age Aug. 28 1915; p 330; pp 3½*; 20c.

Payne, F. R.—*Specifications for the Purchase of Coal Employed at the U. S. Naval Home, Philadelphia, Pa.*—Steam Nov. 1915; p 134; pp 1¼; 35c.

Price, W. Z.—*Dewatering an Anthracite Mine, Pa.* [Water from the river got into the working through a squeeze and is now going to be pumped and drained out. The mine was filled in 1900 and has not been worked since].—Coll'y Eng. Sept. 1915; p 87; pp 3*; 30c.

Rutledge, J. J.—*Observations and Experience in Mine-Inspection Work.* [A paper read before the Mine Inspectors' Inst. of U. S.].—Coal Age Dec. 11 1915; p 969; pp 2¾; 20c.

Rutledge, Walton. — *Early Days of Coal Mining in Illinois.* [A synopsis of the operations with figures on the production].—Coll'y Eng. Oct. 1915; p 142; pp 2*; 35c.

Saunders, E. J.—*The Coal Fields of Kittitas County, Washington.* [A geological account and general description of the mines in several districts].—Wash. Geol. Surv. Bull. 9; pp 204*.

Smith, George Otis.—*Mid-Year Review of Mining Industry,* 1915. [Takes up

the various metals separately, giving their current production, quality and prices current. The metals taken are those of copper, lead, gold, tungsten, iron, coal, petroleum and their associates. After the facts are revealed a general discussion of the situation is taken up].—Mg. World July 10 1915; p 58; pp 7; 10c.

Von Borries, W. J.—*The Coal Fields of Perry County, Kentucky.* [A paper read before the annual meeting of the Kentucky Mg. Inst.].—C. Tr. Bull. Aug. 16 1915; p 43; pp 4; 25c.

Walker, H.—*Coal Mines Inspection in* 1914, *Scotland.* [From the Scotland Mines Dept. report showing production accidents, etc.].—Coll'y Guard. Sept. 10 1915; p 521; pp 2½; 35c.

Wenzel, Ernst.—*Der Bergbau Frankreichs und Seiner Kolonien.* [The coal, coke and briquetting industry in France].—Montanist. Rundschau June 16 1915; p 469; pp 3; 35c.

Zern, E. N.—*West Virginia Coal Mining Institute.* [Reviews the proceedings and doings of the meeting at which no officers were elected. The papers read are briefly abstracted].—Coal Age July 3 1915; p 17; pp 1½; 20c.

——— *Annual Report of the South African Mines Department for* 1914. [Reviews the mining industry of copper, tin, gold, gems and coal, giving figures on their respective productions].—S. Afr. Mines Dept.

——— *Bericht der Rheinischen Kohlenhandel- und Rhederei-Gesellschaft m. b H. über das Geschüftsjahr* 1914-15. [A government report on the Rhine coal fields, Germany].—Glückauf Aug. 14 1915; p 807; pp 2½; 50c.

——— *Bericht des Vereines für die Bergbaulichen Interessen im Nordwestlichen Böhmen zu Teplitz.* [A report on the coal industry and production in northwestern Bohemia, the district of Teplitz].—Montanist. Rundschau Aug. 16 1915; p 568; pp 5; 35c.

——— *British Columbia, the Mineral Province of Canada.* [On the history, laws, production and mining progress during 1914].—Prov. Mineralogist, Victoria; pp 43*.

——— *Coal Mines' Inspection in* 1914, *South Wales Division.* [A reproduction of the mine inspector's report].—Coll'y Guard. Oct. 1 1915; p 685; pp 2½; 70c; Oct. 22 1915; p 837; pp 1⅓; 35c.

——— *Coal Mining at the Panama-Pacific Exposition.* [A description of the various exhibits allied to coal mining].—Coal Age Sept. 18 1915; p 455; pp 2*; 20c.

——— *Coal Mining in South Africa.* [Deals with a review of the industry and recent production].—S. Afr. Engg. Sept. 1915; p 84; pp 3*; 35c.

——— *Coal Stripping in Illinois.* [Development of the revolving steam shovel and methods for handling the overburden].—Coll'y. Eng. Sept. 1915; p 69; pp 3⅓*; 30c.

——— *Contract Work Dispute at Bankhead Coal Mine.* [Is a discussion on the wages of labor in the coal mines when done by contract].—Coal Tr. Bull. July 1 1915; p 36; pp 1½; 25c.

——— *Ferro-Concrete Headgear and Heapstead at Bentley Colliery, England.* [Contains sectional drawings and illustrations].—I. & C. Tr. Rev. July 23 1915; p 97; pp 1½*; 35c.

——— *Illinois Coal Mine Shafts Sunk Subsequent to* 1913 *Must Be Fireproofed.* [Illustrates fireproof structure and tells of the law].—Mg. World Dec. 4 1915; p 899; pp 2*; 10c.

——— *Mining Prospects in German South-West Africa.* [A review of the mineral resources of the country].—Queen. Govt. Mg. Jnl. Aug. 14 1915; p 397; pp 1; 35c.

——— *Mining Prospects in German Southwest Africa.* [Tells of the diamond, copper, tin and coal prospects].—South Afr. Mg. Jnl. June 12 1915; p 359; pp 1½; 35c.

——— *National Association of Colliery Managers, North of England Branch.* [A synopsis of the papers read].—I. & C. Tr. Rev. July 23 1915; p 99; pp 1; 35c.

——— *New System of Concrete Lining Specially Adaptable to Collieries.* [An arched form made of segments].—I. & C. Tr. Rev. July 2 1915; p 7; pp 1⅓*; 35c.

——— *Rebuilding an Unprofitable Mine.* [The mine had failed because of inefficient equipment, etc.].—Coal Age Aug. 14 1915; p 254; pp 1½; 20c.

——— *Rocky Mountain Coal-Mining Institute.* [A complete outline of the proceedings of the society at their summer meeting at Trinidad, Colo.].—Coal Age Aug. 7 1915; p 215; pp 3; 20c.

——— *The Carney-Cherokee Coal Co.'s Coal Stripping Plant Near Mulberry, Kansas.* [A recent installation with one of the largest type of shovels yet constructed].—Excavating Eng. Oct. 1915; p 11; pp 4*; 20c.

——— *The Famous Fushum Colliery, China.* [A general review of the mines

and surrounding country, etc.].—C. Tr. Bull. Sept. 15 1915; p 51; pp 1½; 25c.

——— *The Mine and Service of T. C. Keller Co., Indiana.* [A general description of the property and its methods of operation].—Blk. Diamond Oct. 16 1915; p 320; pp 4*; 25c.

——— *The Panama Canal Coaling Station at Balboa.* [A detailed description with a double-page detailed drawing of the unloading structure with a half-page detail section and various views].—Engg. Aug. 13 1915; p 156; pp 5*; 35c.

——— *The Panama Canal-Cristobal Coaling Plant.* [Describes a loader for boats at the station].—Engg. Oct. 8 1915; p 357; pp 3*; 35c.

——— *The West Cannock Sinkings, England.* [A review of the visit paid by the National Assn. of Coll'y. Eng.].—I. & C. Tr. Rev. Aug. 27 1915; p 254; pp 2*; 35c.

——— *Turbine Pumps at a South Yorkshire Colliery.* [The pumps are being operated at Barnsley, England, by the Hodroyd Coal Co., Ltd.].—Coll'y Guard. July 23 1915; p 166; pp 1⅓*; 35c.

——— *Use of Air Drilling Machines in Coal Mines.* [The jackhamer drill is given prominence].—Coal Age Aug. 21 1915; p 292; pp 1½*; 20c.

——— *West Virginia Coal Mining Institute Holds Summer Meeting.* [Gives a brief outline of the proceedings of the institute at their summer session held June 16 and 17 at Wheeling, W. Va. No officers were elected; the meeting was only one for discussion and the reading of papers].—Coal Tr. Bull. July 1 1915; p 21; pp 2; 25c.

——— *Working Seams That Occur Close Together.* [A method of working where the coal is banded with 2 or 3-ft. seams of shale or other foreign material]. Coal Age Aug. 21 1915; p 290; pp 1½*; 20c.

——— *Yorkshire Main Colliery.* [The surface equipment, including sorting and power plant structure].—I. & C. Tr. Rev. July 2 1915; p 1; pp 2⅓; 35c.

Geology

Arber, Newell, E. A.—*Geology of the Kent Coalfield, England.* [Abst. of a paper read before the Inst. of Mg. Eng., England].—I. & C. T. Rev. Dec. 10 1915; p 713; pp 1½*; 35c; Coll'y Guard. Dec. 10 1915; p 1185; pp 2; 35c.

Bolton, H.—*Fauna and Stratigraphy of the Kent Coal Field.* [A paper presented at the meeting of the Manchester Geological and Mining Society].—Coll'y. Guard. June 25 1915; p. 1327; pp. 1; 35c.

Crider, A. F.—*Coals of the Nortonville Quadrangle, Ky.* [A geological review of the country in general and of particular mines in detail].—Ky. Geol. Surv.; pp 182*.

Dowling, D. B.—*Coal Fields of British Columbia.* [A geologic and economic treatise on the coal deposits being worked and the reserves, in the province, with their location].—Canadian Geol. Surv. Memoir 69; pp 350*.

Dowling, D. B.—*Coal Fields of Manitoba, Saskatchewan, Alberta and Eastern British Columbia.* [Treats on the general geology of the district and its formation with detailed description of the particular coal beds. Figures and results are also given showing the quality of the coal and production].—Canadian Geol. Surv. Memoir 53; pp. 142*.

Folprecht, H.—*Ein Beitrag zur Kenntnis des Südrandes des mährischeschlesisch-polnischen Kohlenbreckens.* [Reviews the geology and production of the coal fields in the vicinity of Prussia and Austria].—Montanist. Rundschau June 16 1915; p 441; pp 6*; 35c.

Garrison, F. Lynwood.—*Mining Conditions in China.* [Is a brief review of the history of the Chinese people, the geography and topography of their country, the geology and coal deposits of the country and the many opportunities for engineers].—E. & M. J. July 3 1915; p 26; pp 2½; 25c.

Hennen, R. V.; Gawthrop, R. M.—*Wyoming and McDowell Counties, West Virginia.* [Coal, sandstone, natural gas and petroleum are the principal resources. In three parts, history, physiography, geology and mineral resources are taken up in detail].—W. Va. Geol. Surv. 1915 report; pp 783*.

Hills, R. C.—*Coals and Coal Fields of the Rocky Mountain Region.* [The geology and grades of coal occurring in the district; paper read before the Rocky Mt. Coal Mg. Inst.].—Mg. Sci. July 1915; p 22; pp 5*; Aug. 1915; p 24; pp 4; 70c; Coll'y Eng. Oct. 1915; p 137; pp 5; 35c.

Krusch, P.—*Das Campine-Kohlengebeit und Seine Beziehungen zu den Uebrigen Steinkohlenbecken Belgiens und Nordwesteuropas.* [On the geology of the coalfields in northwest Europe and Belgium].—Glückauf Nov. 27 1915; p 1149; pp 6*; Dec. 4; p 1177; pp 14; $1.

Lupton, C. T.—*The Orofino Coal Field, Clearwater, Lewis and Idaho Counties, Idaho.* [A description of the geology and

separate prospects and mines].—U. S. G. S. Bull. 621-I; pp 10.

Martin, G. C.; Johnson, B. L.; Grant, U. S.—*Geology and Mineral Resources of Kenai Peninsula, Alaska.* [Is a complete review of the geology and mineral resources of the country, both in general and detail for particular places].—U. S. G. S. Bull. 587; pp 243*.

Miller, A. M.—*Geology of Franklin County, Ky.* [Details are given on the deposits in particular as well as a description of the geology for the district in general].—Ky. Geol. Surv.; pp 144*.

Müller-Herrings, P.—*Erz und Kohle, Sumatra.* [The geology and production of the Sumatra coal fields].—Glückauf Sept. 18 1915; p 913; pp 7*; Sept. 25 1915; p 937; pp 8*; Oct. 2 1915; p 911; pp 3; $2.

Oberlehrer, H. W.—*Allgemein-Geologische Betrachtungen über die Saarkahle.* [A review of the geology of the coal beds in Allgemein, Germany].—Glückauf Aug. 21 1915; p 821; pp 7*; 50c.

Peck, W. R.—*The Harlan, Kentucky, Coal Fields.* [The drainage, topography, history, geology and mineral reserves of the county are here described. After a general description is given a more detailed description is given of each coal seam with a brief on the production].—Coll'y. Eng. July 1915; p. 649; pp. 6; 30c.

Rowe, J. P.; Wilson, Roy.—*Bull Mountain Coal Field, Montana.* [The geology of the third largest district in the state].—Coll'y Eng. Aug. 1915; p 7; pp 4½; Sept. 1915; p 74; pp 5*; 60c.

Saunders, E. J.—*The Coal Fields of Kittitas County, Washington.* [A geological account and general description of the mines in several districts].—Wash. Geol. Surv. Bull. 9; pp 204*.

Strahan, Aubrey.—*Geological Research in the Coal Fields of England During* 1914. [From a summary report of the English Geol. Surv.].—Coll'y Guard. Sept. 10 1915; p 520; pp 1⅓; 35c.

Strahan, A.; Pollard, W.—*The Coals of South Wales, with Special Reference to the Origin and Distribution of Anthracite.*—London Geol. Surv. Memoir; pp 101*; 75c.

Twelvetrees, W. H.—*The Catamaran and Strathblane Coal Fields, Tasmania.* —Tas. Dept. of Mines Bull. No. 20.

Transport, Haulage, Conveying, Etc.

Brackett, Geo. S.—*Motor Haulage and Side Tracks.* [Deals with the arrangement of tracks in coal mines at junctions for both animal and motor haulage].—Coal age Oct. 9 1915; p 580; pp 2½*; Oct. 16 1915; p 622; pp 4*; 40c.

Bright, Graham.—*The Modern Electric Mine Locomotive.* [Discussion of various types with tables showing their duties].—A. I. E. E. Aug. 1915; p 1615; pp 6*; 35c.

Broughton, H. H.—*The Electric Crane Applied to the Handling of Coal and Ore.* [Details of electric cranes, etc., for handling mine stock piles].—Elect. July 23 1915; p 575; pp 4*; 35c.

Brown, J. F. K.—*Continuous Face Haulage.* [A rope haulage system which will handle about 600 tons per day].—Coal Age Dec. 25 1915; p 1063; pp 2*; 20c.

Brown, J. F. K.—*Mining with a Conveyor System.* [A novel scheme by which cost was lowered and safety increased by installing 300 ft. conveyors underground]. Coal Age Aug. 7 1915; p 204; pp 4; 20c.

Brown, J.; McCale, C. H.—*Laying out a Pit Bottom for an Indian Colliery.* [Tells of haulage systems and arrangements in shaft bottoms and throughout underground workings. A great deal of advantage is here taken of gravitational methods. There is also some consideration given here to the hoisting problem].—Trans. Mg. & Geol. Inst. of India March 1915; p. 20*; 60c.

Clansman.—*Haulage in Collieries.* [A method for working and operating haulage at curves and branches].—Sci. & Art of Mg. Dec. 4 1915; p 202; pp 1½*; 35c.

Coleman, J. E.—*Coal Mining in West Virginia.* [Describes the sociological features in the camp and the haulage problem at the mines, besides sundry other operations].—Sibley Jnl. Engg. Oct. 1915; p 21; pp 6½*; 30c.

De Wolfe, E. C.—*Novel Combination Locomotive.* [A storage battery locomotive used in coal mines].—Coal Age Dec. 4 1915; p 923; pp 2¾*; 20c.

Foley, F. J.—*Combination Gathering Motor.* [A locomotive of low height operating from storage batteries].—Coal Age Dec. 4 1915; p 928; pp 2*; 20c.

Futers, T. C.—*The "Diamond" Coal Cutting and Conveying Machine.*—Colly. Eng. Dec. 3 1915; p 1131; pp 1*; 35c.

Gibson, T. S.—*Proposal for Shaft Bottom Arrangements and Methods of Working in Deep Seams.* [Is a paper written by the president of the society on the problems which will be encountered in deep coal mines. It is suffixed with discussion of the paper regarding

haulage and hoisting].—Trans. Mg. & Geol. Inst. of India March 1915; p 98; pp 9*; 60c.

Hyde, M. L.—*Correct Tipple Design.* [This sets forth what the features of a good tipple should be and what duties it should perform].—Coal Age Sept. 18 1915; p 450; pp 3½*; Sept. 25 1915; p 502; pp 4*; 40c.

Johnson, R. G.—*An Interesting New Pennsylvania Coal Mine.* [Confined to a general description of the property and the shaft with its hoisting machinery].—Coal Age Oct. 16 1915; p 631; pp 2*; 20c.

McPhee, Richard. — *Compressed-Air Haulage in a Scottish Colliery.* [A paper read before the Assn. of Coll'y. Mgrs. on a system of haulage actuated by cable systems].—I. & C. Tr. Rev. Oct. 1 1915; p 419; pp 1*; 35c.

Norman, Fred.—*Allegheny River Mining Co.'s Cadogan Mine, Pa.* [A method of working where three beds will be worked simultaneously. Methods for market preparation of the coal are also given].—Coal Age Aug. 28 1915; p 330; pp 3½*; 20c.

Steelman, J.—*Coal Shipments Through the Panama Canal.* [A general review of the subject].—Coal Age Oct. 23 1915; p 670; pp 3½*; 20c.

Stewart, E. P.—*A Southern Indiana Washery.* [Wet conditions and a fire clay floor render the small sizes unmarketable without washing and screening].—Coal Age Nov. 27 1915; p 878; pp 1¼*; 20c.

——— *Contract Work Dispute at Bankhead Coal Mine.* [Is a discussion on the wages of labor in the coal mines when done by contract].—Coal Tr. Bull. July 1 1915; p 36; pp 1½; 25c.

——— *Herbert Mine of the Connellsville Central Coke Co., Pa.* [Explains the operation of their underground haulage system, which employs gasoline locomotives].—Coal Age Sept. 11 1915; p 414; pp 3½*; 20c.

——— *New Washery, Coking and By-Product Plant at Tinsley Park Colliery, England.*—I. & C. Tr. Rev. Nov. 12 1915; p 593; pp 3*; 35c.

——— *Western Rate Advance on Coal.* [Deals with coal freight rates and transportation as recently adjusted by the U. S. Commerce Commission].—Coal Age Aug. 28 1915; p 334; pp 3½; 20c.

——— *Yorkshire Main Colliery.* The surface equipment, including sorting and power plant structures].—I. & C. Tr. Rev. July 2 1915; p 1; pp 2⅓*; 35c.

Hoisting

Brown, R. E.—*The Alternating Current Coal Hoist.* [Paper read before the A. I. E. E. treating on a hoist which is operated by compressed air].—C. Tr. Bull. Aug. 16 1915; p 55; pp 2; Sept. 1 1915; p 47; pp 2; 50c.

Halbaum, H. W. G.—*Winding Drums and Winding Ropes.* [A paper presented at the North of England Institute of Mining and Mechanical Engineers. Discusses and describes various kinds of ropes and hoisting drums as regards safety and economy. The paper is concluded with a page of discussion on the article].—I. & C. Tr. Rev. June 25 1915; p. 877; pp. 3⅓*; 35c.

Hyde, M. L.—*Modern Mine Plant Design.* [Deals with surface equipment as power, hoists, powder house, etc.].—Coal Age Nov. 13 1915; p 790; pp 4½*; 20c.

Means, C. M.—*Canonsburg Gas Coal Co.'s Plant, Pa.* [Describes the hoist. Electricity is used throughout].—Coal Age Dec. 4 1915; p 921; pp 1¾*; 20c.

Netland, L.—*Comox Mines, Vancouver Island, B. C.* [Brings out the hydro-electric plant, electric hoist, and methods used for sizing, preparation, etc.].—Coll'y Eng. Sept. 1915; p 59; pp 4½*; 30c.

——— *A Slope Mine in Illinois.* [Loaded and empty car-hauls driven by an electric motor take the place of hoisting engines and cages].—Coal Age Sept. 25 1915; p 496; pp 1*; 20c.

Preparation, Handling, Marketing, Etc.

Brackett, G. S.—*Supervision of Mining Details.* [Points that should be thought of when considering various common problems which present themselves in daily operation].—Coal Age Sept. 18 1915; p 457; pp 1½; 20c.

Brown, J. F. K.—*South Africa's Interest in the South American Market.* [Takes up the labor conditions in the Transvaal and Natal where colored labor is used. Also gives information on the production and marketing of the coal]. Coal Age Oct. 30 1915; p 702; pp 5*; 20c.

Burroughs, W. G.—*Coal Fields of South America.* [Markets, conditions and coal deposits in Bolivia, Paraguay, Uruguay and Chile].—Coll'y Eng. Oct. 1915; p 153; pp 2; 35c.

Coleman, F. C.—*Extensions and Improvements at the Shotton Colliery, England.* [Regenerative coke ovens have been installed with a complete by-product recovery plant].—Coll'y Guard. Oct. 15 1915; p 771; pp 4*; 35c.

Coxe, E. H.—*Successful Shoveling Machine.* [A machine for shoveling coal from the mine floor into the mine car].—Coal Age July 15 1915; p 86; pp 2*; 20c.

Hudler, D. J.—*Die Stapelungsart von Steinkohle mit Rückicht auf Selbstentzünd ung und Verwitterung.* [Methods for piling coal with reference to spontaneous combustion and decay].—Glückauf Sept. 4 1915; p 869; pp 7*; 50c.

Johnson, F. S.—*Problems in Successful Coking.* [A brief review of the coking industry in the United States showing how the mining and preparation at the mine will often increase the quality of the product. Reference is also made to the byproduct ovens].—Coal Age July 3 1915; p 17; pp 1½; 20c.

Kershaw, J. B. C.—*The Storage of Coal.* [Deals with the chemical constituents of coal as related to the subject].—Coal Age Dec. 11 1915; p 962; pp 2¼; 20c.

Macaulay, D. A.—*The Drumheller Coal Field, Alberta, Canada.* [Abst. from the bulletin of the Canadian Mg. Inst., with a complete description of the coal seams is given and also a self-dumping cage, with detailed drawings of the same].—Colly. Guard. Dec. 31 1915; p 1333; pp 1⅓*; 35c.

Netland, L.—*Comox Mines, Vancouver Island, B. C.* [Brings out the hydro-electric plant, electric hoist, and methods used for sizing, preparation, etc.].—Coll'y Eng. Sept. 1915; p 59; pp 4½*; 30c.

Norman, Fred.—*Allegheny River Mining Co.'s Cadogan Mine, Pa.* [A method of working where three beds will be worked simultaneously. Methods for market preparation of the coal are also given].—Coal Age Aug. 28 1915; p 330; pp 3½*; 20c.

Philips, Stuart C.—*Rapid Erection of Steel Coal Breaker.* [Contains a very good illustration showing the building while being erected with description regarding the rapidity of its erection].—Engg. News July 1 1915; p. 1; pp. 2*; 25c.

Vogel, J. P.—*An Interesting Pennsylvania Mine.* [The preparation plant described has a capacity of 6000 tons daily].—Coal Age Nov. 13 1915; p 794; pp 2½*; 20c.

Williams, M. J.—*Crushers for Byproduct Ovens.* [A description of two of the largest machines built to crush coking coal to ⅛ mesh size. The crushers weigh 15 tons and have an hourly capacity of 300 tons].—Coal Age July 3 1915; p 10; pp 1½*; 20c.

——— *Automatic Sampling of Coal.* [The sampler is located underneath the conveyor].—Coal Age Sept. 11 1915; p 423; pp 1¼*; 20c.

——— *Coal Handling at Panama.* [On the coal docks at Balboa and Cristobal, located at the Pacific and Atlantic entrance to the canal].—Coal Age Aug. 7 1915; p 210; pp 5*; 20c.

——— *New Washery, Coking and By-Product Plant at Tinsley Park Colliery, England.*—I. & C. Tr. Rev. Nov. 12, 1915; p 593; pp 3*; 35c.

——— *Proposed Tentative Methods for the Sampling and Analysis of Coal.* [A joint report from the American Chem. Soc. and the American Soc. of Testing Materials].—Chem. Eng. Oct. 1915; p 157; pp 7*; 35c.

——— *The Mine and Service of T. C. Keller Co., Indiana.* [A general description of the property and its methods of operation].—Blk. Diamond Oct. 16 1915; p 320; pp 4*; 25c.

——— *The Panama Canal-Cristobal Coaling Plant.* [Describes a loader for boats at the station].—Engg. Oct. 8 1915; p 357; pp 3*; 35c.

Mechanical Cutters

Brown, J. F. K.—*Details of Coal Cutter Operations.* [A general review of the operation].—Coal Age Dec. 11 1915; p 968; pp ¾*; 20c.

Dalton, A. J.—*Track Work with Center Cutting Machines.* [Points on the laying of tracks for the cutter and results obtained].—Coll'y Eng. Aug. 1915; p 28; pp 1½*; 30c.

Futers, T. C.—*The "Diamond" Coal Cutting and Conveying Machine.*—Coll'y Eng. Dec. 3 1915; p 1131; pp 1*; 35c.

Mavor, Sam.—*Compressed Air for Coal-Cutters.* [Abst. of a paper read before the Institution of Mining Engineers].—Coll'y Guard. Sept. 17 1915; p 570; pp 3*; Sept. 24 1915; p 622; pp 1⅓*; Oct. 1 1915; p 673; pp 1⅓*; $1.05; Sci. & Art. of Mg. Oct. 9 1915; p 97; pp 3*; Oct. 23 1915; p 126; pp 1½; 70c.

——— *Midland Institute of Mining, Civil and Mechanical Engineers, England.* [Proceedings of the meeting and briefs on the papers, "Compressed Air and Coal Cutting" and "Earth Movements on Coal Measures"].—Coll'y Guard. Oct. 8 1915; p 725; pp 3; 35c.

Power General

Clark, H. H.—*Permissible Explosion-Proof Electric Motors for Mines; Conditions and Requirements for Test and Ap-*

proval. [Speaks of types in which electric arcs are at a minimum].—Bureau of Mines Tech. Paper 101; pp 17*; Coll'y Guard. Sept. 10 1915; p 517; pp 1*; 35c.

Cliff, R. C.—*The Power Plant of the North Bulli Colliery, Coledale, N. S. W.* [The main unit is a 400-kw. alternating current motor].—Mg. & Engg. Rev. Oct. 5 1915; p 5; pp 4*; 35c.

Coleman, F. C.—*Interesting Improvement Scheme at an Important Group of Collieries in Northumberland, England.* [A new coke-oven and byproduct installation with exhaust steam turbine plant].—Coll'y Guard. July 2 1915; p 13; pp 3⅛*; 35c.

Crosby, F. B.—*Variable-Speed A.-C. Motors for Driving Mine Fans.* [A motor in which adjusted for varying speeds and do away with the single and double speed induction types].—Coal Age Sept. 4 1915; p 374; pp 2¾*; 20c.

De Wolfe, E. C.—*Alternating-Current Machines for Small Coal Mines.* [A specific instance where an abandoned coal mine has resumed operations by using the current].—Coal Age July 24 1915; p 120; pp 1¼*; 20c.

Mather, T. A.—*Economy in Ventilating Mines With Purchased Power.* [Paying for power from an outside source has brought to view many unknown leaks in previous power consumption].—Coal Age. Sept. 4 1915; p 380; pp 1½; 20c.

Mavor, Sam.—*Compressed Air for Coal-Cutters.* [Abst. of a paper read before the Institution of Mining Engineers].—Coll'y Guard. Sept. 17 1915; p 570; pp 3*; Sept. 24 1915; p 622; pp 1⅛*; Oct. 1 1915; p 673; pp 1⅛*; $1.05; Sci. & Art of Mg. Oct. 9 1915; p 97; pp 3*; Oct. 23 1915; p 126; pp 1½; 70c.

McPhee, Richard. — *Compressed-Air Haulage in a Scottish Colliery.* [A paper read before the Assn. of Coll'y Mgrs. on a system of haulage actuated by cable systems].—I. & C. Tr. Rev. Oct. 1 1915; p 419; pp 1*; 35c.

Mills, M. H.—*Gas Producers at Collieries for Obtaining Power and By-Products from Unsaleable Fuel.* [Abst. from a paper read before the Institution of Mining Engineers].—Coll'y. Guard. Oct. 1 1915; p 669; pp 3*; 35c.

Netland, L.—*Comox Mines, Vancouver Island, B. C.* [Brings out the hydro-electric plant, electric hoist, and methods used for sizing, preparation, etc.].—Coll'y. Eng. Sept. 1915; p 59; pp 4½*; 30c.

Reynolds, H. B.—*Wood and Coal as Fuel for Steam Boilers.* [A number of tests showing the results obtained by burning both kinds of fuel and costs in several cases].—Sibley Jnl. Engg. Oct. 1915; p 14; pp 6*; 30c.

Smith, R. R.—*Practical Points in Connection with the Use of Electricity in Mines.* [A paper read before the Lancashire branch of the National Assn. of Coll'y Managers].—I. & C. Tr. Rev. Oct. 29 1915; p 542; pp 1½*; 35c.

Trautschold, R.—*Power-House Chimneys for Steam Sizes of Anthracite.* [Brings out points regarding the theory and practice in the use of natural drafts].—Coal Age Sept. 11 1915; p 418; pp 3½*; 20c.

Tupper, C. A.—*Synchronous Motors for Coal-Mine Operations.* [This type of motor tends to correct the low power factor which prevails in underloaded alternating-current systems].—Coal Age Aug. 14 1915; p 251; pp 2; 20c.

Wilson, E. B.—*Firing with Coal Dust.* [Advantages of the method, principles used, and description of the apparatus and process].—Coll'y Eng. Oct. 1915; p 125; pp 2*; 35c.

Young, C. M.—*Lucerne Power Plant and Tipple.* [Is a complete review of the sorting for market and the steam power equipment].—Coll'y Eng. Aug. 1915; p 1; pp 5*; 30c.

——— *A Serviceable Coal Chart.* [A description and reproduction of the chart accepted by the National District Heating Association, from which the cost of steam with a given grade of coal under various conditions can be readily obtained].—E. & M. J. Oct. 16 1915; p 636; pp 1¾*; 25c.

——— *Air-Compressors for Colliery Work.* [Both steam and electrical driven types are described. They are used in the Scotch coal mines].—Coll'y Guard. Sept. 3 1915; p 467; pp 1⅛*; 35c.

——— *Application of Electric Power at the Soudan Mine, Pa.*—Coal Age Aug. 14 1915; p 250; pp 1*; 20c.

——— *The Rossiter, Pa., Power Plant.* [Gives a complete description of the power plant which supplies electric power. Electricity is used almost exclusively underground at the mine].—Coll'y Eng. July 1915; p 633; pp 4*; 30c.

——— *The Use of Pulverized Coal.* (Reverberatory furnaces for smelting copper, etc., are adapting this kind of fuel].—S. Afr. Mg. Jnl. June 26 1915; p 400; pp 1; 35c.

Electricity in Coal Mining

Netland, L.—*Comox Mines, Vancouver*

Island, B. C. [Brings out the hydro-electric plant, electric hoist, and methods used for sizing, preparation, etc.].—Coll'y. Eng. Sept. 1915; p 59; pp 4½*; 30c.

——— *Application of Electric Power at the Soudan Mine, Pa.*—Coal Age Aug. 14 1915; p 250; pp 1*; 20c.

——— *Causes of Electrical Accidents in British Collieries.* [A report on accidents which occurred in the North and Midland divisions in England, being made by the British Govt. Mine Inspector].—Elect. Rev. & West. Elect. Nov. 13 1915; p 903; pp 1*; 20c.

——— *Electric Generating Plant at Grassmoor Collieries.* [The generators are driven with gas engines].—I. & C. Tr. Rev. July 2 1915; p 12; pp 1⅓*; 35c.

——— *The Rossiter, Pa., Power Plant.* [Gives a complete description of the power plant which supplies electric power. Electricity is used almost exclusively underground at the mine].—Coll'y Eng. July 1915; p 633; pp 4*; 30c.

Explosives, Blasting

Andros, S. O.—*Coal Mining in Illinois.* [Gives a complete account of the history, quality of product, mining ventilation, timbering, blasting, etc.].—Univ. Ill. Bull. 13; pp 250*.

Fay, A. H.—*Production of Explosives in the United States During* 1914 *with Notes on Coal Mine Accidents Due to Explosives.* [The information is in tabulated form accompanied with an explanation of the tables].—U. S. Bur. of Mines Tech. Paper 107; pp 16.

Hyde, M. L.—*Modern Mine-Plant Design.* [Deals with surface equipment as power, hoists, powder house, etc.]—Coal Age No. 13 1915; p 790; pp 4½*; 20c.

——— *The Causes of Misfires in Shot-Firing.* [Abst. of a paper read before the Chem. Met. & Mg. Soc. of S. Afr.]—I. & C. Tr. Rev. Aug. 6 1915; p 159; pp 1; 35c.

Explosions—Mine Fires, Gases, Coal Dust, Fire Damp, Etc.

Bell, J. W.—*Dealing with Gob-Fires.* [A paper read before the National Assn. of Colliery Managers. Gives causes for such spontaneous fires and methods for destroying them].—I. & C. Tr. Rev. Dec. 17 1915; p 748; pp 1⅔*; 35c.

Burrell, G. A.; Oberfell, G. G.—*The Limits of Inflammability of Mixtures of Methane and Air.* [Experimental work on the explosive properties of this mixture].—U. S. Bur. of Mines Tech. Paper 119; pp 30*.

Cain, Joseph.—*Sealing Off Mine Fires.* [A paper read before the Kentucky Mg. Inst. explaining several types of structures for this purpose].—Coal Age Dec. 25 1915; p 1048; pp 2¾*; 20c.

Cornet, F. C.—*Unexpected Emission of Gas.* [Speaks of the nonoccurrence of gas in a coal mine until some of the shale seams and unworkable coal bodies are cracked and gas let in].—Coal Age Oct. 23 1915; p 666; pp 1¼*; 20c.

Darton, N. H.—*Occurrence of Explosive Gases in Coal Mines.* [Pennsylvania and Illinois make up the two fields in which the investigations were carried on]. Bur. of Mines Bull. 72; pp 248*.

DeHart, J. D.—*Explosion at the Twin City Coal Mine.* [Is a detailed description of the mine and the explosion].—Canadian Mg. Inst. Aug. 1915; p 626; pp 7*; 35c.

Fay, A. H.—*Deaths from Explosives and from Electricity.* [Abst. from a U. S. Bur. of Mines paper].—Coal Age Sept. 18 1915; p 454; pp 1; 20c.

Forrester, J. B.—*The Black Hawk Mine Fire, Utah.* [Experience in fighting fire with the oxygen helmet].—Coll'y Eng. Aug. 1915; p 12; pp 6*; 30c.

Haldane, J. S.—*The New Coal-Dust Experiments.* [A reprint of the seventh report of the Explosions in Mines Committee, also dealing with the effect of the dust on the laborer].—I. & C. Tr. Rev. Dec. 10 1915; p 709; pp 3; 35c; Coll'y Guard. Dec. 10 1915; p 1181; pp 3⅔; 35c.

Lawrie, W. E.—*Spontaneous Combustion in Mines.* [Paper read before the Ipswich and District Mg. Inst. giving various causes for spontaneous combustion in coal seams].—Queen Mg. Jnl. Sept. 15 1915; p 451; pp 3½; 35c.

Meguro, S.—*The Hojo Coal Mine in Japan.* [The procedure for ascertaining the cause of the explosion in this mine is given in detail. No definite conclusion has been made, but considerable study has been made regarding the source of the explosion. This is being done by noting the direction of the explosive wave and coked dust found in various places].—Coll'y Eng. July 1915; p 637; pp 6*; 30c.

Rice, G. S.—*American Coke Dust Investigations.* [Experiments made at the Bruceton experimental mine, read before the Inst. of Mg. Eng. at London].—C. Tr. Bull. Aug. 2 1915; p 28; pp 6*; 25c.

Rice, Geo. S.; Jones, L. M.—*Methods of Preventing and Limiting Explosions*

in Coal Mines. [Deals with the construction of barriers which curtail the effects of the explosion].—U. S. Bur. of Mines Tech. Paper 84; pp 45*.

Taffanel, M. J.—*Die Versuche zu Commentry über Kohlenstaubentzündungen.* [A comment on the coal dust question].—Zts. Schiess & Sprengstoffw. Oct. 15 1915; p 263; pp 3½*; 35c.

Winmill, W. F.—*Absorption of Oxygen by Coal.* [Tests showing the influence of temperature, moisture, etc., and the probability of spontaneous ignition].—Coll'y Eng. Oct. 1915; p 147; pp 6*; 35c.

——— *Experiments with Coal Dust at the Derne Gallery.* [Translated from the German, Glückauf].—Coll'y Guard. Oct. 29 1915; p 874; pp 1; 35c.

——— *The Reserve Mine Explosion, B. C.*—Mg. Engg. & Elect. Record July 1915; p 109; pp 3½*; 35c.

Safety, Rescue, First Aid

Clark, H. H.—*Explosion-Proof Electric Motors for Mines.* [Abst. from a U. S. Bur. of Mines Tech. Paper].—Coll'y Guard. Sept. 10 1915; p 517; pp 1*; 35c.

Forrester, J. B.—*The Black Hawk Mine Fire, Utah.* [Experience in fighting fire with the oxygen helmet].—Coll'y Eng. Aug. 1915; p 12; pp 6*; 30c.

Gibbs, C. H.—*Annual First-Aid and Mine Rescue Contest of Utah Fuel Co.*—S. L. Mg. Rev. Sept. 30 1915; p 11; pp 4*; 25c.

Haldane, J. S.—*Self-Contained Rescue Apparatus.* [Experiments with smoke helmets in hot and moist atmospheres, from A. I. M. E.].—Coll'y Eng. Sept. 1915; p 81; pp 2⅔; 30c.

Levin, N. D.—*A Protective System for Coal Mines.* [A means for clearing dead-ends with canvas pipe and blowers, thus preventing explosions].—Coll'y Eng. Oct. 1915; p 135; pp 2*; 35c.

Mayer, Ralph W.—*Automatic Incline Devices.* [Some of the safety devices on the 4,000 ft. incline of the Roslyn-Cascade Co. in Washington].—Coal Age July 24 1915; p 127; pp 2*; 20c.

Mayer, R. W.—*Drag Car for the Man Trip.* [A special car equipped with safety drags so as not to be derailed when brought into use].—Coal Age Oct. 23 1915; p 673; pp 1; 20c.

McCrystle, J.—*Anticipating Mine Fires.* [Paper delivered to the Panther Valley Mg. Inst.].—Coll'y Eng. Sept. 1915; p 79; pp 2*; 30c.

Mikesell, H. S.—*Fire Prevention at Coal Mines.* [Precautions taken to prevent mine fires and action to be taken in case of one].—Coal Age July 31 1915; p 161; pp 2½; 20c.

Rice, Geo. S.; Jones, L. M.—*Methods of Preventing and Limiting Explosions in Coal Mines.* [Deals with the construction of barriers which curtail the effects of the explosion].—U. S. Bur. of Mines Tech. Paper 84; pp 45*.

Stevenson, John.—*Flame Safety Lamps and Electric Lamps for Use in Mines.* [Compares the electric and flame type of lamps as safety lamps for use in coal mines. Various experimental work is cited in both cases].—Canadian Mg. Inst. Bull. July 1915; p 524; pp 7; 35c.

——— *A New Electric Safety Lamp.* [A type of hat lamp remodeled after the design of the one which took first prize at a recent British competition].—Coal Age Aug. 7 1915; p 218; pp 2½*; 20c.

——— *First-Aid Meet of Susquehanna and Lytle Coal Companies.*—Coal Age Oct. 9 1915; p 596; pp 3¾*; 20c.

——— *Illinois Coal Mine Shafts Sunk Subsequent to* 1913 *Must Be Fireproofed.* [Illustrates fireproof structure and tells of the law].—Mg. World Dec. 4 1915; p 899; pp 2*; 10c.

——— *Susquehanna's Safety Methods.* [Describes a man catcher in the company's collieries, besides other safety devices].—Coal Age Nov. 6 1915; p 765; pp 3*; 20c.

Lighting, Signalling

Clark, H. H.—*Portable Electric Mine Lamps.* [A paper read before the West Virginia Coal Mg. Inst.].—C. Tr. Bull. Aug. 16 1915; p 41; pp 2; 25c.

Coppock, J.; Lodge, G. A.—*Introduction to Mining Science.* [A book on the principles of mining, dealing mostly with ventilation and safety lamps].—Longmans, Green & Co., London; pp 230*; 60c.

Stevenson, John.—*Flame Safety Lamps and Electric Lamps for Use in Mines.* [Compares the electric and flame type of lamps as safety lamps for use in coal mines. Various experimental work is cited in both cases].—Canadian Mg. Inst. Bull. July 1915; p 524; pp 7; 35c.

Ventilation

Andros, S. O.—*Coal Mining in Illinois.* [Gives a complete account of the history, quality of product, mining ventilation, timbering, blasting, etc.].—Univ. Ill. Bull. 13; pp 250*.

Briggs, Henry.—*Uses for Underground Fans.* [From this discussion fans may

be used to help out in the relay or made to be the primary factor].—Coal Age Sept. 4 1915; p 370; pp 3*; 20c.

Brown, J. F. K.—*Self-Acting Ventilation Door.* [A door which is opened by the approaching car and closed by gravity and the air current].—Coal Age Oct. 2 1915; p 545; pp 1½*; 20c.

Coppock, J.; Lodge, G. A.—*Introduction to Mining Science.* [A book on the principles of mining, dealing mostly with ventilation and safety lamps].—Longmans, Green & Co., London; pp 230*; 60c.

Cornet, F. C.—*Reminiscences in Ventilation.* [Recollections of French and Belgian engineers in regard to the testing of pneumatic ventilating appliances].—Coal Age Sept. 4 1915; p 382; pp 2*; 20c.

Crosby, F. B.—*Variable-Speed, A.-C. Motors for Driving Mine Fans.* [A motor in which adjusted for varying speeds and do away with the single and double speed induction types].—Coal Age Sept. 4 1915; p 374; pp 2¾*; 20c*.

Greer, G. E.—*Projection of a Panel Mine.* [A paper read before the W. Va. Mg. Inst. The system gives a large tonnage from a small working area, prevents squeezes and allows a good ventilating system].—Coal Age Dec. 25 1915; p 1061; pp 2*; 20c.

Mather, T. A.—*Economy in Ventilating Mines with Purchased Power.* [Paying for power from an outside source has brought to view many unknown leaks in previous power consumption].—Coal Age Sept. 4 1915; p 380; pp 1½; 20c.

Ryba, Gustav. *Sandereindichtungen zur raschen Umkehrung der Grubenbewetterung.* [Is a treatise in German on forced ventilation].—Montanist Rundschau July 16 1915; p 497; pp 6½*; 35c.

Whittome, Arthur C.—*The Influence of Moisture in the Air on Mine Ventilation.* [Abst. from a paper read before the S. Afr. Inst. Eng. on tests made covering the above topic].—I. & C. Tr. Rev. July 30 1915; p 127; pp 2⅓; 35c; Coll'y Guard Aug. 6 1915; p 269; pp 1⅔; 35c.

——— *Methods of Working and Ventilation.* [A theoretical brief on the subject].—Sci. & Art of Mg. Aug. 28 1915; p 25; pp 2*; 35c.

Accidents

Briggs, H.—*Control and Costs of British Rescue Stations.* [The writer compares the advantages of private with central mine-rescue stations].—Coal Age. Oct. 2 1915; p 536; pp 2½; 20c.

Graham, Thomas.—*Notes on Mine Accidents in British Columbia for Year* 1914. [Reasons for and conditions under which accidents occurred in both metalliferous and coal mines. Comparisons with previous years are also made, as well as comparison of different places and conditions surrounding].—Canadian Mg. Inst. Bull. July 1915; p 516; pp 8; 35c.

——— *Accident Near Coaldale, Pa.* [In Foster's tunnel men were entombed for 6 days].—Coal Age Nov. 27 1915; p 880; pp 1½*; 20c.

——— *Causes of Electrical Accidents in British Collieries.* [A report on accidents which occurred in the North and Midland divisions in England, being made by the British Govt. Mine Inspector].—Elect. Rev. & West. Elect. Nov. 13 1915; p 903; pp 1*; 20c.

——— *Pennsylvania District Mine Inspector Issues Instructions to Mine Officials.* [Is a letter from the inspector of the seventh bituminous district warning and reviewing for officials the accidents which occurred, their cause and means for avoiding the same].—Coal Tr. Bull. July 1 1915; p 37; pp 1; 25c.

Labor, Management, Sociological

Archibald, Hugh.—*Why Are Strikes at Coal Mines of Such Frequent Occurrence?* [Is a discussion of the strike cause in general and declares that the rate per ton paid to the miner is sufficiently high, but that no one seems anxious to see that he is aided in producing a larger output].—Coal Age July 10 1915; p 48; pp 2; July 24 1915; p 124; pp 2½; 40c.

Bischoff, J. W.—*Labor Problems at Coal Mines.* [A paper read before the W. Va. Coal Mg. Inst.].—Coal Age. Dec. 25, 1915; p 1058; pp 1½; 20c.

Brown, J. F. K.—*South Africa's Interest in the South American Market.* [Takes up labor conditions in the Transvaal and Natal where colored labor is used. Also gives information on the production and marketing of the coal].—Coal Age Oct. 30 1915; p 702; pp 5*; 20c.

Coleman, J. E.—*Coal Mining in West Virginia.* [Describes the sociological features in the camp and the haulage problem at the mines, besides sundry other operations].—Sibley Jnl. Engg. Oct. 1915; p 21; pp 6½*; 30c.

Griffiths, David.—*Advantages of Social Welfare.* [Paper read before the Rocky Mt. Coal Mg. Inst.].—C. Tr. Bull. Sept. 1 1915; p 43; pp 3½; 25c.

Hall, Frank.—*Mining and Humanitari-*

anism. [Brings out the treatment which the employe should receive from the employer].—C. Tr. Bull. Aug. 2 1915; p 43; pp 3; 25c.

Keeley, Josiah.—*The Psychology of Strikes at Coal Mines.* [A cause for strikes is not blamed to general grievances in this instance].—Coal Age Aug. 21 1915; p 294; pp 2½; 20c.

Lohmann, K. B.—*A New Era for Mining Towns.* [Illustrates a plan for an ideal mining town and relates that a better town would make better men].—Coal Age Nov 13 1915; p 799; pp 1½*; 20c.

Lohmann, K. B.—*Trees in the Life of a Coal Mining Community.* [Discusses the bare appearance made by the absence of trees in coal mining camps].—Coal Age Oct. 16 1915; p 628; pp 2*; 20c.

Noland, Lloyd.—*Welfare Work of the Tennessee Coal, Iron & Railroad Co.* I. Tr. Rev. Aug. 19 1915; p 356; pp 2½; 25c.

Williams, R. Y.—*Need for Industrial Education Among Miners.* [Address delivered at a meeting of the Mine Inspectors Inst. of U. S.].—C. Tr. Rev. Dec. 1 1915; p 28; pp 3; 25c.

——— *Main Island Creek Coal Co., Omar, W. Va.* [A treatise on the social conditions and management of the mine, with a description of their methods of haulage, mining and preparation for the market].—Elect. Mg. July 1915; p 49; pp 28*; 20c.

——— *National Coal Association Plans Things Worth While.* [The social work of the association is here taken up].—C. Tr. Bull. Aug. 2 1915; p 35; pp 2; 25c.

Economics of Coal Mining

Ashley, G. H.—*Rhode Island Coal.* [It is said the coal has and has not been used for commercial purposes and this investigation was for the purpose of deciding the question].—U. S. G. S. Bull. 615; pp 62*.

Benson, H. K.—*The Industrial Resources and Opportunities of the Northwest United States.* [From the proceedings of the American Chem. Soc.].—Met. & Chem. Engg. Sept. 1915; p 587; pp 2; 30c.

Breckenridge, L. P.—*How to Burn Soft Coal with Economy and Without Waste.*—Jnl. Cleveland Eng. Soc. Sept. 1915; p 111; pp 24; 45c.

Dorrance, C., Jr.—*Factors Which Increase Cost of Anthracite Mining.* [A paper read before the State Retailers' Assn.].—C. Tr. Bull. Dec. 15 1915; p 27; pp 2¾; 25c.

Elwood, W. F.—*The Efficiency of Coal Tested.* [The author has made various tests on boilers in operation and not an analysis of the coal in the laboratory. This latter as an idea of standardizing coal, and obtaining systematic efficiency, he disapproves, as technical data is put in the hands of those who do not understand it, and this is worse than no knowledge at all].—Coal Tr. Bull. July 1 1915; p 43; pp 3½; 25c.

Fieldner, A. C.; Feild, A. L.—*A New Method and Furnace for the Determination of the Softening Temperature of Coal Ash Under Fuel Bed Conditions.* [The furnace is of a laboratory type].—Jnl. Industrial & Chem. Engg. Oct. 1915; p 829; pp 5½*; 60c.

Gould, G. B.—*Waste in the Selection and Purchasing of Coal.* [Gives a number of analysis and qualitative tests of coal].—Engg. Mag. Sept. 1915; p 850; pp 11; 35c.

Grady, W. H.—*Cost Factors in Coal Production.* [Efficient methods of operation and mining are taken up in detail with costs for various methods of mining].—I. & C. Tr. Rev. Aug. 20 1915; p 219; pp 4⅓*; 35c.

Hauger L. G.—*Practical Economy at Coal Mines.* [Treats for the most part on the up-keep of machinery and haulage systems].—Coll'y Eng. Oct. 1915; p 128; pp 3; 35c.

Hay, T. R.—*Economics of the Central Station in Mining.* [Machinery is not described here, but a discussion is made of the use of electricity and arrangement of the equipment, what kind of equipment is necessary for various kinds of work and where savings can be initiated].—Coal Age July 10 1915; p 44; pp 4*; 20c.

Keely, J.—*Mining Coal Without a Profit.* [A protest inducing both the miner and consumer to be more economical].—Coal Age Oct. 16 1915; p 620; pp 1½; 20c.

Wilson, E. B.—*Firing with Coal Dust.* [Advantages of the method, principles used, and description of the apparatus and process].—Coll'y Eng. Oct. 1915; p 125; pp 2*; 35c.

——— *Fuel-Combustion Improves.* [Discusses tests, etc., on various chemical and other devices for saving fuel].—Coal Age Dec. 11 1915; p 965; pp 2½*; 20c.

Miscellaneous

Ashley, G. H.—*Rhode Island Coal.* [It is said the coal has and has not been used for commercial purposes and this inves-

tigation was for the purpose of deciding the question].—U. S. G. S. Bull. 615; pp 62*.

Efsall, H. J.—*Insuring the Coal Supply.* [Speaks of various methods for stockpiling coal and the advantages of stocking so as to keep a more even market].—Coal Age Nov. 6 1915; p 749; pp 7*; 20c.

Fearnsides, W. G.—*Some Effects of Earth Movement on the Coal Measures of the Shefficld District.* [A paper read before the Institution of Mining Engineers].—Coll'y Guard. Sept. 17 1915; p 567; pp 3 1/3*; 35c.

Fohl, W. E.—*Valuation of Coal Land.* [Consideration of the subject from a financial point. Paper read before the West Virginia Coal Mg. Inst.]—C. Tr. Bull. Aug. 16 1915; p 25; pp 2; 25c; Coll'y Eng. Sept. 1915; p 64; pp 2; 30c.

Hollings, Harold; Cobb, J. W.—*A Thermal Study of the Carbonization of Coal.* [Paper read before the Inst. of Gas Eng., England].—Coll'y. Guard. Aug. 20, 1915; p 1½*; 35c.

Hudler, D. J.—*Die Stapelungsart von Steinkohle mit Rückicht auf Selbstentzünd ung und Verwitterung.* [Methods for piling coal with reference to spontaneous combustion and decay].—Glückauf Sept. 4 1915; p 869; p 7*; 50c.

Lesher, C. E.—*Field Apparatus for Determining Ash in Coal.* [Describes the apparatus and its operation].—U. S. G. S. Bull. 621-Z; pp 12*.

Lomax, James.—*The Microscopical Examination of Coal.* [A lecture read before the South Staffordshire Inst. of M. Engg.].—July 30 1915; p 231; pp 2*; 35c.

Mathewson, E. P.—*Anaconda Coal-Pulverizing Plant.* [Contains a description with sectional and plan drawings on the new plant now being built at Anaconda. It supplies coal dust fuel for the reverberatory furnaces at the Washoe reduction works].—E. & M. J. July 10 1915; p. 45; pp. 3*; 25c.

McNeil, J. C.—*Coal Mine Accounting System.* [Notably on the benefits to be derived from an efficient accounting system].—Coal Age Sept. 11 1915; p 422; pp 1¼; 20c.

Payne, F. R.—*Specifications for the Purchase of Coal Employed at the U. S. Naval Home, Philadelphia, Pa.*—Steam Nov. 1915; p 134; pp 1¼; 35c.

Robinson, W. L.—*Powdered Coal.* [The use of powdered coal as a fuel is now becoming a matter of importance, and as such is here discussed].—Coll'y Eng. July 1915; p 646; pp 2; 30c.

Sim, J.—*Laboratory Work for Coal Mining Students.* [Brings out up-to-date methods for sampling and analyzing coal]. E. Arnold, London; pp 136; $1.

Stewart, E. P.—*A Southern Indiana Washery.* [Wet conditions and a fire clay floor render the small sizes unmarketable without washing and screening].—Coal Age Nov. 27 1915; p 878; pp 1¼*; 20c.

Taylor, S. A.—*The Valuation of Coal Lands.* [A paper read before the International Engg. Congress showing the abuse of fixing mine valuation for taxation].—C. Tr. Bull. Oct. 1 1915; p 30; pp 3*; 25c.

Trautschold, R.—*Some Technical Aspects of the New York Specifications.* [An account of the qualities required in buying coal in various departments of New York].—Coal Age Oct. 30 1915; p 711; pp 2; 20c.

Van Epps, J. S.—*Today and Twenty-five Years Ago.* [Paper read at the Michigan-Ohio-Indiana Coal Ass'n; compares the industry now and then].—Coal Tr. Bull. July 15 1915; p 27; pp 5; 25c.

——— *Bericht des Deutschen Braunkohlen-Industrie-Vereins über das Geschäftsjahr* 1914-1915. [A report of the German Soft-Coal Commission].—Glückauf Aug. 7 1915; p 776; pp 4; 50c.

——— *Il Carbone Polverizzato come Combustibile per i Forni Metallurgici.* [Tells of the use of pulverized and powdered coal in metallurgical practice].—Rass. Mineraria June 16 1915; p. 109; pp. 1½; 35c.

——— *Illinois Miners' and Mechanics Institute Suspended.*—Coal Age Aug. 14 1915; p 256; pp ¾; 20c.

——— *Meeting of the Alabama Coal Operators' Association.* [Was the sixth annual meeting, held July 10].—Coal Age July 24 1915; p 129; pp 1½*; 20c.

——— *Pennsylvania State Tax Upon Anthracite Invalid.* [Gives the decision of the supreme court in regard to taxing coal].—Coal Age Nov. 13 1915; p 802; pp 1¼; 20c.

——— *Railway Coal-Storage Plants.* [Abst. from Engineering News].—Coal Age Oct. 16 1915; p 626; pp 2*; 20c.

——— *Storage of Coal.* [A report of the International Railway Fuel Assn.].—C. Tr. Bull. Oct. 15 1915; p 47; pp 5; 25c.

——— *Storage of Coal.* [Speaks of methods for making the stock pile and the diplomacy in stocking coal so as not to overrun the demand].—C. Tr. Rev. Nov. 1 1915; p 43; pp 8; 25c.

——— *The Coal and Coke Trades of the United Kingdom in* 1915. [A talk on prices obtained, labor, wages and other

peculiar conditions affecting the market rather than the industry].—I. & C. Tr. Rev. Dec. 31 1915; p 797; pp 7; 35c.

——— *The Microscopical Examination of Coal.* [Explains the operations and illustrates the results].—Coll'y Guard. July 9 1915; p 65; pp 1½*; 35c.

Production

Brown, G. C.—*Mines and Mineral Resources of Shasta, Siskiyou and Trinity Counties, Cal.* [Copper, gold, silver, brick, lime, chrome, pyrite, coal, mercury, etc., are produced].—Cal. State Mg. Bur.; pp 192*.

Brown, J. F. K.—*South Africa's Interest in the South American Market.* [Takes up the labor conditions in the Transvaal and Natal where colored labor is used. Also gives information on the production and marketing of the coal].—Coal Age Oct. 30 1915; p 702; pp 5*; 20c.

Burroughs, Wilbur Greeley. — *Coal Fields of South America.* [The tonnage of the coal bed reserves of Ecuador and and Peru are here given with a brief description of the beds. Figures are also given regarding the production and importation of coal to those countries].—Coll'y Eng. July 1915; p 643; pp 1; Sept. 1915; p 72; pp 1½; Oct. 1915; p 153; pp 2; 90c.

Dowling, D. B.—*Coal Fields of Manitoba, Saskatchewan, Alberta and Eastern British Columbia.* [Treats on the general geology of the district and its formation with detailed description of the particular coal beds. Figures and results are also given showing the quality of the coal and production].—Canadian Geol. Surv. Memoir 53; pp 142*.

Folprecht, H.—*Ein Beitrag zur Kenntnis des Südrandes des mährischeschlesisch-polnischen Kohlenbreckens.* [Reviews the geology and production of the coal fields in the vicinity of Prussia and Austria].—Montanist. Rundschau June 16 1915; p 441; pp 6*; 35c.

Gray, F. W.—*The Coal Trade in Nova Scotia during the First Half of* 1915. [On the production of companies and districts of the country].—Canadian Mg. Jnl. July 15 1915; p 433; pp 1; 35c.

Hayden, H. H.—*Presidential Address.* [An address made to the Mining and Geological Institute of India on the mineral production and conditions of the industry in India].—M. & G. Inst. of Ind. June 1915; p 14; pp 21*; 50c.

Jacobs, E.—*Mineral Production of British Columbia.* [Notably on gold, silver and copper].—Canadian Mg. Inst. Bull. Sept. 1915; p 669; pp 4½; 35c.

Jevons, H. S.—*The British Coal Trade.* [Discusses the trade and gives production figures on the subject, omitting technical expressions, etc.]—Trübner & Co., London; $2.

Lesher, C. E.—*The Production of Coal in* 1914.—Min. Res. of U. S. II:31; pp 160.

McBride, Richard.—*Annual Report of the Minister of Mines for the Year Ending Dec.* 31, 1914, *B. C.* [Details on the mining, milling, etc., of gold, copper, zinc, lead, silver, etc., in the province].—Bur. of Mines, Victoria, B. C.; pp 543*.

Mitman, C. W.—*Coal and Coal Products Exhibited in the U. S. National Museum.*—Mg. World Oct. 23 1915; p 647; pp 2*; 10c.

Müller-Herrings, P.—*Erz und Kohle, Sumatra.* [The geology and production of the Sumatra coal fields].—Glückauf Sept. 18 1915; p 913; pp 7*; Sept. 25 1915; p 937; pp 8*; Oct. 2 1915; p 911; pp 3; $2.

Peck, W. R.—*The Harlan, Kentucky, Coal Fields.* [The drainage, topography, history, geology and mineral reserves of the county are here described. After a general description is given a more detailed description is given of each coal seam with a brief on the production].—Coll'y Eng. July 1915; p 649; pp 6; 30c.

Phillips, W. B.—*Mineral Resources of Texas.* [Contains statistics on production, discussion of the counties and mining laws of the state].—Univ. of Texas Bull. 365; pp 320*.

Przyborski, M.—*Ungarns Montanindustrie und Aufzenhandel in den wichtigsten Montanprodukten im Jahre* 1913. [Gives the coal production of Germany and the surrounding countries].—Montanist Rundschau July 16 1915; p 503; pp 5; 35c.

Rutledge, Walton. — *Early Days of Coal Mining in Illinois.* [A synopsis of the operations with figures on the production].—Coll'y Eng. Oct. 1915; p 142; pp 2*; 35c.

Smith, George Otis—*Mid-Year Review of Mining Industry,* 1915. [Takes up the various metals separately, giving their current production, quality and prices current. The metals taken are those of copper, lead, gold, tungsten, iron, coal, petroleum and their associates. After the facts are revealed a general discussion of the situation is taken up].—Mg. World July 10 1915; p. 58; pp. 7; 10c.

Sylvester, G. E.—*Twenty-Fourth Annual Report of the Mining Department,*

Tennessee. [Gives statistics on the production of coal, copper, clay, etc., with a brief on each of the operating mines in the state].—Tenn. Dept. of Mines Report 1914; pp 147.

——— *Annual Report of the South African Mines Department for* 1914. [Reviews the mining industry of copper, tin, gold, gems and coal, giving figures on their respective productions].—S. Afr. Mines Dept.

——— *Bericht des Vereines für die Bergbaulichen Interessen im Nordwestlichen Böhmen zu Teplitz.* [A report on the coal industry and production in northwestern Bohemia, the district of Teplitz].—Montanist. Rundschau Aug. 16 1915; p 568; pp 5; 35c.

——— *British Columbia, the Mineral Province of Canada.* [On the history, laws, production and mining progress during 1914].—Prov. Mineralogist, Victoria; pp 43*.

——— *Coal Mining in South Africa.* [Deals with a review of the industry and recent production].—S. Afr. Engg. Sept. 1915; p 84; pp 3*; 35c.

——— *Coal in Alabama, Wyoming, New Mexico, Michigan and Georgia During* 1914. [Has details of the amount of coal produced in the states mentioned and gives some discussion on the production of each].—Coal Tr. Bull. July 1 1915; p 27; pp 1; 25c.

——— *Das Berg und Hüttenwesen in Bosnien und Herzegowina im Jahre* 1914. [Mine and metallurgical production in Bosnien and Herzegowina, Germany, in 1914].—Montanist. Rund. Nov. 1 1915; p 709; pp 3½; 35c.

——— *Die Bergarbeiterlöhne in Deutschland im Jahre* 1914. [Statistics on coal, potash and iron mining industries in Germany in 1914].—Glückauf June 12 1915; p 590; pp 8; 50c.

——— *Die Bergarbeiterlöhne in Preutzen im* 1. *und* 2. *Vierteljahr* 1915. [A comparison of the productions of copper, salts and coal produced in the years of 1914 and 1915].—Glückauf Nov. 15 1915; p 1115; pp 5½; 50c.

——— *Die Täigkeit der Staatlichen Montanwerke in Ungarn im Jahre* 1915. [An abst. from "A Banya," giving the production of coal and iron in Ungarn].—Montanist. Rund. Nov. 16 1915; p 743; pp 3; 35c.

——— *Estadistica Minera del Peru en* 1913. [Statistics on the mineral production of Peru, both metallic and non-metallic].—Cuerpo Ing. Minas Bull 81; p 9; pp 122; 75c.

——— *Industrial Resources of the Northwest.* [On the mineral resources and production of coal, oil, gold, silver, copper, etc., in Oregon, Washington, Idaho, B. C., etc.].—Canadian Mg. Jnl. Oct. 15 1915; p 632; pp 1¼; 35c.

——— *Kentucky Coal Production in* 1914 *Analyzed by State Inspector.*—C. Tr. Bull. Sept. 1 1915; p 35; pp 3½; 25c.

——— *Main Island Creek Coal Co., Omar, W. Va.* [A treatise on the social conditions and management of the mine with a description of their methods of haulage, mining and preparation for the market].—Elect. Mg. July 1915; p 49; pp 28*; 20c.

——— *Output of Coal and the Use of Electricity in Mines of England.* [A report of H. M. Inspector of Mines].—Elect. Rev. Oct. 22 1915; p 538; pp 2; 35c.

——— *Queensland Mineral Production in* 1914.—Mg. Jnl. Oct. 2 1915; p 693; pp 2; 35c.

——— *Retiring Mine Inspector Reviews Coal Trade Conditions.* [The coal resources of Indiana and the production are here reviewed, giving a general idea of the history and conditions influencing the industry in that and other states].—Coal Tr. Bull. July 1 1915; p 51; pp 1½; 25c.

——— *South African Mining in* 1914. [Abst. from the South African Dept. of Mines Bull.].—Coll'y Guard. Sept. 10 1915; p 518; pp 1; 35c.

——— *Tasmania in* 1914. [The mineral production from the state, consisting of gold, silver, tin, copper, coal, etc.].—Mg. Jnl. Oct. 30 1915; p 751; pp 1½; 35c.

By-Products

Bradley, H.—*Potash from Wood and Plant Ashes.*—Met. & Chem. Engg. Nov. 15, 1915; p 841; pp 6*; 25c.

Christopher, J. E.—*Coal Distillation, Gasification and By-Products.* [A series of articles which appeared in the Science and Art of Mining. The subjects of gas producers, coal distillation and by-products, coke, and by-products from the blast furnace are considered].—Thomas Wall & Sons, Wigan, England; pp 90*; book; 75c.

Christopher, J. E.—*Coal Distillation and By-Products.* [Contains condensed information and not the expected in a text book proper].—Thomas Wall & Son, Wigan, England; pp 90*; 75c.

Coleman, F. C.—*Extensions and Improvements at the Shotton Colliery, Eng-*

land. [Regenerative coke ovens have been installed with a complete by-product recovery plant].—Coll'y Guard. Oct. 15 1915; p 771; pp 4*; 35c.

Coleman, F. C.—*Interesting Improvement Scheme at an Important Group of Collieries in Northumberland, England.* [A new coke-oven and byproduct installation with exhaust steam turbine plant].—Coll'y Guard. July 2 1915; p 13; pp 3⅓*; 35c.

Chrisp, George.—*Notes on the Development of the By-Product Coking Industry in Great Britain.* [A review of the evolution of operations in the practice].—Sci. & Art of Mg. Dec. 18 1915; p 224; pp 2¾; 35c.

Freyn, H. J.—*Notes on the Utilization of Coke-Oven and Blast-Furnace Gas for Power Purposes.* [A paper read before the A. I. M. E. on the using of waste gases for combustion engines].—I. & C. Tr. Rev. Aug. 6 1915; p 160; pp 4½; 35c.

Gardner, W. M.—*The British Coal-Tar Industry.* [A general review].—Williams & Norgate, London; $3.

Jimenez, Carlos P.—*Estadistica Minera en* 1913. [Reviews the production of and industry regarding the various metals worked in Peru. Tables are given showing both the production and accidents which occurred].—Cuerpo de Ingenieros de Minas Bull. 81; pp 132.

Johnson, F. S.—*Problems in Successful Coking.* [A brief review of the coking industry in the United States, showing how the mining and preparation at the mine will often increase the quality of the product. Reference is also made to the byproduct ovens].—Coal Age July 3 1915; p 17; pp 1½; 20c.

Lomax, C. S.—*By-Product Ovens for Foundry Coke.* [Operation of coke-oven battery where uniformity gives satisfactory results].—I. Tr. Rev. Aug. 19 1915; p 361; pp 2; 25c.

Lymn, A. H.—*By-Product Coal Gas Producers.* [A paper read at a meeting of the A. S. M. E. on the recovery of by-products from gas-producers].—I. Tr. Rev. Dec. 9 1915; p 1123; pp 8*; 25c.

McAfee, A. M.—*The Improvement of High Boiling Petroleum Oils and the Manufacture of Gasoline as a By-Product Therefrom by the Action of Aluminum Chloride.* [Read before the A. I. Chem. Eng.].—Jnl. of Indst. & Engg. Chem. Sept. 1915; p 737; pp 4; 60c; Met. & Chem. Engg. Sept. 15 1915; p 592; pp 5; 30c.

Mills, M. H.—*Gas Producers at Collieries for Obtaining Power and By-Products from Unsaleable Fuel.* [Abst. from a paper read before the Institution of Mining Engineers].—Coll'y. Guard. Oct. 1 1915; p 669; pp 3*; 35c.

Mitman, C. W.—*Coal and Coal Products Exhibited in the U. S. National Museum.*—Mg. World Oct. 23 1915; p 647; pp 2*; 10c.

Mueller, W. A.—*Use of Coal Tar in Flotation.* [Experimental results and practical operations are discussed].—E. & M. J. Oct. 9 1915; p 591; pp 3; 25c.

Parr, S. W.; Olin, H. L.—*Coking Coal at Low Temperatures.* [Abst. from a Univ. of Ill. Bull. on experimental work in coking Illinois coal].—I. Tr. Rev. Nov. 25 1915; p 1027; pp 7½*; 25c.

Pratt, E. E.—*Do We Want a Coal-Tar Chemical Industry.* [An address before the Soc. of Chem. Ind.].—Mg. World Oct. 1915; p 689; pp 1¼; 10c.

Seaver, K.—*Manufacture and Tests of Silica Brick for the By-Product Coke Oven.* [Takes up several kinds of material used, the method of manufacture and testing the finished product and raw material].—A. I. M. E. Bull. Sept. 1915; p 1913; pp 14½*; 35c; C. Tr. Bull. Oct. 15 1915; p 28; pp 6½; 25c; Met. & Chem. Engg. Nov. 15 1915; p 861; pp 5; 25c.

Stansfield, E.; Carter, F. E.—*Products and By-Products of Coal in Canada.* [Treats on both coking and distillation of coal].—Canada Mines Branch No. 323; pp 51*; Canadian Mg. Jnl. Sept. 1 1915; p 533; pp 4½; 35c.

Williams, M. J.—*Crushers for Byproduct Ovens.* [A description of two of the largest machines built to crush coking coal to ⅛ mesh size. The crushers weigh 15 tons and have an hourly capacity of 300 tons].—Coal Age July 3 1915; p 10; pp 1½*; 20c.

——— *Coke as a Domestic Fuel.* [Reviews coke as an efficient domestic fuel that can be compared with anthracite coal and tells how a larger market could be made for it by educating the people as to its good qualities and uses].—Coal Age July 3 1915; p 13; pp 2; 20c.

——— *Coking and By-Products Installation at Victoria Works, Ebbw Vale.* [Details of arrangement and operation].—I. & C. Tr. Rev. July 16 1915; p 65; pp 2*; 35c.

——— *Manufacture of Coke in By-Product Ovens.*—Mg. World Nov. 20 1915; p 819; pp ¾; 10c.

——— *New Washery, Coking and By-Product Plant at Tinsley Park Colliery, England.*—I. & C. Tr. Rev. Nov. 12 1915; p 593; pp 3*; 35c.

COAL BRIQUETTING

See under Mill and Milling.

COKE

Chrisp, George.—*Notes on the Development of the By-Product Coking Industry in Great Britain.* [A review of the evolution of operations in the practice].—Sci. & Art of Mg. Dec. 18 1915; p 224; pp 2¾; 35c.

Christopher, J. E.—*Coal Distillation, Gasification and By-Products.* [A series of articles which appeared in the Science and Art of Mining. The subjects of gas producers, coal distillation and by-products, coke, and by-products from the blast furnace are considered].—Thomas Wall & Sons, Wigan, England; pp 90*; book; 75c.

Coleman, F. C.—*Extensions and Improvements at the Shotton Colliery, England.* [Regenerative coke ovens have been installed with a complete by-product recovery plant].—Coll'y Guard. Oct. 15 1915; p 771; pp 4*; 35c.

Coleman, F. C.—*Interesting Improvement Scheme at an Important Group of Collieries in Northumberland, England.* [A new coke-oven and byproduct installation with exhaust steam turbine plant].—Coll'y Guard. July 2 1915; p 13; pp 3⅓*; 35c.

Dobbelstein, K.—*Beschickung von Koksöfen mit Kleinen, Elektrisch Betrieben Fülltrichterwagen.* [Electric haulage in coke-oven plants].—Glückauf Oct. 9 1915; p 989; pp 2*; 50c.

Fay, Albert H.—*Coke-Oven Accidents in the United States.* [The accidents are classified as slight and serious. Statistical tables are given regarding each and the nature of the accident is given in detail where possible with discussion on a means for its prevention].—U. S. Bureau of Mines Tech. Paper 118; pp. 16.

Freyn, H. J.—*Notes on the Utilization of Coke-Oven and Blast-Furnace Gas for Power Purposes.* [A paper read before the A. I. M. E. on the using of waste gases for combustion engines].—I. & C. Tr. Rev. Aug. 6 1915; p 160; pp 4½; 35c.

Geismer, H. S.—*Improving the Beehive Output.* [Compares the byproduct and beehive coke as regards quality and cost of production, giving preference to the former. A careful study is also made of the efficient operations of beehive ovens].—Coal Age July 3 1915; p 11; pp 1½; 20c.

Hetzel, F. V.—*Modern Coke-Handling Methods.* [Shows and discusses machines used for the loading, handling and cleaning coke on the stock pile. Wagon and bag loaders are described fully].—Coal Age July 3 1915; p 8; pp 2*; 20c.

Johnson, F. S.—*Problems in Successful Coking.* [A brief review of the coking industry in the United States, showing how the mining and preparation at the mine will often increase the quality of the product. Reference is also made to the byproduct ovens].—Coal Age July 3 1915; p 17; pp 1½; 20c.

Lesher, C. E.—*The Manufacture of Coke in* 1914. [A general description of the trade, its production, imports and exports, and a review of the industry in detail by separate states].—Min. Res. of U. S. II:25; pp 56; Coal Tr. Bull. Nov. 1 1915; p 27; pp 6; 25c.

Lomax, C. S.—*By-Product Ovens for Foundry Coke.* [Operation of coke-oven battery where uniformity gives satisfactory results].—I. Tr. Rev. Aug. 19 1915; p 361; pp 2; 25c.

Lowell, F. L.—*Mines and Mineral Resources of Del Norte, Humboldt and Mendocino Counties, Cal.* [Copper, gold, coal and petroleum are the principal minerals. A brief is given on the geology of each county and the properties are then described].—Cal. State Mg. Bur.; pp 59*.

Maccoun, A. E.—*The Trend of Blast Furnace Improvements.* [A paper read before the A. I. & S. I. covering blast furnace and hot stove tests and suggestions as to improvements that might be made].—Iron Age Sept. 16 1915; p 624; pp 3*; 30c.

Naderhoff, A.—*Selbsdichtende Koksofentüren.* [On the construction of coke oven doors.—Glückauf July 10 1915; p 677; pp 4½*; 50c.

Parr, S. W.; Olin, H. L.—*The Coking of Coal at Low Temperatures with Special Reference to the Properties and Composition of the Products.*—Univ. Ill. Bull. 79; pp 39*; I. Tr. Rev. Nov. 25 1915; p 1027; pp 7½*; 25c.

Rice, G. S.—*American Coke Dust Investigations.* [Experiments made at the Bruceton experimental mine, read before the Inst. of Mg. Eng. at London].—C. Tr. Bull. Aug. 2 1915; p 28; pp 6*; 25c.

Ricks, E. C.—*Modern Appliances in Coke Manufacture.* [The old beehive coke ovens are taken up here and it is shown that it is not so wasteful as formerly thought, because of the new ideas attached to it. Coke-oven doors are discussed at length].—Coal Age July 3 1915; p 4; pp 3*; 20c.

Seaver, K.—*Manufacture and Tests of Silica Brick for the By-Product Coke*

Oven. [Takes up several kinds of material used, the method of manufacture and testing the finished product and raw material].—A. I. M. E. Bull. Sept. 1915; p 1913; pp 14½*; 35c; C. Tr. Bull. Oct. 15 1915; p 28; pp 6½; 25c; Met. & Chem. Engg. Nov. 15 1915; p 861; pp 5; 25c.

Simmersbach, O.—*Coke Ovens with Top Heat.* [Translated from Stahl und Eisen].—I. & C. Tr. Rev. Oct. 29 1915; p 535; pp 2*; 35c.

Torrese, D. M.—*Produzione del Coke Metallurgico.* [The production of coke for the metallurgical industry].—Metallurgia Ital. Oct. 30 1915; p 633; pp 12*; $1.

Wenzel, Ernst.—*Der Bergbau Frankreichs und Seiner Kolonien.* [The coal, coke and briquetting industry in France].—Montanist. Rundschau June 16 1915; p 469; pp 3; 35c.

Williams, M. J.—*Crushers for Byproduct Ovens.* [A description of two of the largest machines built to crush coking coal to ⅛ mesh size. The crushers weigh 15 tons and have an hourly capacity of 300 tons].—Coal Age July 3 1915; p 10; pp 1½*; 20c.

——— *Coke as a Domestic Fuel.* [Reviews coke as an efficient domestic fuel that can be compared with anthracite coal and tells how a larger market could be made for it by educating the people as to its good qualities and uses].—Coal Age July 3 1915; p 13; pp 2; 20c.

——— *Coking and By-Products Installation at Victoria Works, Ebbw Vale.* [Details of arrangement and operation].—I. & C. Tr. Rev. July 16 1915; p 65; pp 2*; 35c.

——— *Koks in der Gietzereipraxis.* [Coke used in foundry work].—Kali, Erz & Kohle Nov. 15 1915; p 383; pp 1; 35c.

——— *Manufacture of Coke in By-Product Ovens.*—Mg. World Nov. 20 1915; p 819: pp ¾; 10c.

——— *Mechanical Doors and Brick Doors on Beehive Coke Ovens.* [Gives a comparison of the two types of doors, especially as regards their cost of operation].—Coll'y Eng. July 1915; p 644; pp 1½; 30c.

——— *New Washery, Coking and By-Product Plant at Tinsley Park Colliery, England.*—I. & C. Tr. Rev. Nov. 12 1915; p 593; pp 3*; 35c.

——— *Record of the Coke Works in the Connellsville Region.* [In tabulated form, giving the name of the company, number of ovens operating and location of their offices].—Coal Age Oct. 23 1915; p 674; pp 1½; 20c.

——— *The Manufacture of Coke in* 1914. [Abst. from Mineral Resources of the United States].—C. Tr. Bull. Nov. 1 1915; p 51; pp 3½; 25c.

——— *The Coal and Coke Trades of the United Kingdom in* 1915. [A talk on prices obtained, labor, wages and other peculiar conditions affecting the market rather than the industry].—I. & C. Tr. Rev. Dec. 31 1915; p 797; pp 7; 35c.

———*Welfare Work of the Frick Coke Co., Pennsylvania.* [Gives the design of houses and other information regarding social and sanitary conditions].—Coll'y Eng. Oct. 1915; p 117; pp 8*; 35c.

PEAT

Davis, C. A.—*The Production of Peat in* 1914. [Tells of the economic uses to which peat is put besides giving a description of the operations in general during the year with figures on production].—Min. Res. of U. S. II: 24; pp 11.

Haanel, B. F.; Blizard, John.—*Results of the Investigation of Six Lignite Samples Obtained from the Province of Alberta, Canada.* [Both the apparatus and method of procedure are described and considerable of the results are plotted into curves].—Canada Mines Branch 331; pp 110*.

Huels, F. W.—*The Peat Resources of Wisconsin.* [Takes up a description of the fields, methods of prospecting for, its genesis, value as a fuel and for gas producers].—Wis. Geol. Surv. Bull. XLV; pp 274*.

MISCELLANEOUS FUELS

Bacon, C. J.—*How to Utilize Waste Heat in Boilers.* [In a foundry this system is saving 250 lbs. of coal per ton of ingots].—I. Tr. Rev. Dec. 23 1915; p 1225; pp 6*; 25c.

Bartlett, C. O.—*Burning Coal Dust in Reverberatory Furnaces.* [Some details regarding the operation].—Mg. World Dec. 4 1915; p 895; pp 2*; 10c.

Best, W. N.—*Petroleum as Fuel Under Boilers and in Furnaces for Melting and Heat Treatment of Metals.* [Abst. from a paper read before the A. I. M. E.]—Oildom Oct. 1915; p 119; pp 5*; 30c.

Borman, W.; Ruff, Otto.—*Die Naheutektische Temperatur der Eisen-Kohlenstofflegierungen.* [Gives the form in which the carbon exists in iron at various temperatures].—Ferrum June 1915; p 124; pp 3*; 75c.

Breckenridge, L. P.—*How to Burn Soft Coal with Economy and Without Waste.*—Jnl. Cleveland Eng. Soc. Sept. 1915; p 111; pp 24; 45c.

Brinley, C. C.—*The Mechanical Handling of Coal and Ashes.*—Engg. Mag. Oct. 1915; p 65; pp 13*; 35c.

Bull, R. A.—*Atomizing Fuel Oil.* [Abst. of a paper read before the American Foundrymen's Assn., in which tests show that superheated steam is better than air in open-hearth furnace work].—Iron Age Nov. 4 1915; p 1049; pp 1½*; 30c; I. Tr. Rev. Sept. 30 1915; p 626; pp 4; 25c; Foundry Oct. 1915; p 424; pp 3; 35c.

Bull, R. A.—*Tests in Atomizing Fuel Oil with Steam and Air.* [An abst. from a paper read at the American Foundrymen's Assn.].—Foundry Oct. 1915; p 424; pp 3*; 35c.

Emerson, H.—*Analysis of Dependent Sequence as a Guide to Fuel Economies.* [A paper read before the International Fuel Assn.].—C. Tr. Bull. Oct. 1 1915; p 43; pp 5½; 25c.

Fernald, R. H.—*Notes on the Use of Low-Grade Fuel in Europe.*—U. S. Bur. of Mines Tech. Paper 123; pp 37*.

Hays, J. W.—*Combustion and Smokeless Furnaces.* [The subject is commenced with the most elementary phases and progresses to the more advanced study of the subject].—J. W. Hays, Chicago; pp 118*; $2.

Hays, J. W.—*How to Build Up Furnace Efficiency.* [Discusses the ways in which fuel is wasted and means for stopping this waste].—J. W. Hays, Chicago; pp 126*; $1.

Hornaday, W. D.—*Making Fuel Out of Garbage.* [All the refuse is briquetted and sold for $6.50 per ton].—Coal Age Oct. 23 1915; p 668; pp 1¾*; 20c.

Huels, F. W.—*The Peat Resources of Wisconsin.* [Takes up a description of the fields, methods of prospecting for, its genesis, value as a fuel and for gas producers].—Wis. Geol. Surv. Bull. XLV; pp 274*.

Johnson, J. R., Jr.—*Chemical Principles of the Blast Furnace.* [Treats on the fuels used and impurities which go into the slag. A note is added on the handling of iron-titanium ores].—Met. & Chem. Engg. Sept. 15 1915; p 634; pp 4½; 30c.

Langworthy, R. A.—*Blower Installations and Air Ducts.* [Various arrangements for forced draft stokers].—Pract. Eng. Dec. 1 1915; p 1078; pp 2½*; 20c.

Mann, A. S.—*Some Problems in Burning Powdered Coal.* [From the G. E. Rev. giving results of experimental work in the practical use of the fuel].—Iron Age Sept. 16 1915; p 632; pp 2½*; 30c; Steam Dec. 1915; p 159; pp 2¼*; 35c.

Parker, E. W.—*Fuel Briquetting in* 1914. [Is a financial and production review of the industry in 1914].—Mineral Resources U. S. II:5; pp 4.

Streeter, R. L.—*Internal Combustion Engines.* [A general text on the subject, including the use of fuels and a comparison of costs].—McGraw-Hill; pp 409*; $4.

Trautschold, Reginald. — *Pulverized Coal as Fuel for the Steam Power House.* [A straightforward discussion of the subject].—Steam Oct. 1915; p 97; pp 2; 35c.

Warford, N. L.—*Pulverized Coal for Copper Smelting.* [Describes the plant now in successful operation at the Anaconda plant].—Mg. World Nov. 6 1915; p 721; pp 3*; 10c.

Wilson, E. B.—*Firing with Coal Dust.* [Advantages of the method, principles used, and description of the apparatus and process].—Coll'y Eng. Oct. 1915; p 125; pp 2*; 35c.

——— *Erdöl als Brennstoff unter Kesseln und in Oefen für Heizung Scmelzung und Glühung von Metallen.* [The use of petroleum and combustible material in heat treatment and smelting of metals].—Zts. Internat. Vereines Bohringenieure Oct. 15 1915; p 77; pp 2½; 35c.

CHAPTER X.

Petroleum, Natural Gas, Etc.

PETROLEUM

Oil Fields and Mining

Anderson, Robert; Pack, R. W.—*Geology and Oil Resources of the West Border of the San Joaquin Valley North of Coalinga, California.* [The geology is described and discussions are given regarding the possibilities of finding economic deposits of oil in several vicinities].—U. S. G. S. Bull. 603; pp 220*.

Bonine, C. A.—*Anticlines in the Clinton Sand Near Wooster, Wayne County, Ohio.* [The sandstone formation is oil and gas bearing, methods of prospecting and its features being here described].—U. S. G. S. Bull. 621-H; pp 12*.

Bowie, C. P.—*Pumping California Crude Oil.* [Describes methods for laying out pipe lines and pumping stations].—Engg. News Dec. 2 1915; p 3¾*; 25c.

Cameron, W. E.—*Boring for Oil at Roma, Australia.* [The operations were for prospecting purposes].—Queen. Govt. Mg. Jnl. Nov. 15 1915; p 552; pp 1½; 35c.

Dyer, E. I.—*Union Oil Co., Cal.* [A review of their financial conditions, production, etc.].—Mg. & Oil Bull. Sept. 1915; p 232; pp 5*; 25c.

Dunaj, Karl.—*Die Erdölindustrie in Galizien.* [The petroleum industry in Galicia].—Glückauf July 3 1915; p 659; pp 4½*; 50c.

Eddy, L. H.—*Regulation of Oil and Gas Wells in California.* [A review of the recent law passed in the state regarding the wells].—E. & M. J. Sept. 4 1915; p 383; pp 1; 25c.

Glenn, L. C.—*Recent Oil Developments Near Oneida, Scott County, Tennessee.*—Res. of Tenn. Oct. 1915; p 174; pp 21*.

Howell, R. W.; Wegemann, C. H.—*The Lawton Oil and Gas Field, Oklahoma.* [Deals with the geology, methods of prospecting and a general review of the district].—U. S. G. S. Bull. 621-G; pp 15*.

Huntley, L. G.—*The Mexican Oil Fields.* [Deals with the history of their development, production, geology, etc.].—A. I. M. E. Bull. Sept. 1915; p 2067; pp 41*; 35c; Mex. Mg. Jnl. Nov. 1915; p 394; pp 3½; 35c.

Jimenez, Carlos P.—*Estadistica Minera en* 1913. [Reviews the production of and industry regarding the various metals worked in Peru. Tables are given showing both the production and accidents which occurred].—Cuerpo de Ingenieros de Minas Bull. 81; pp 132.

LeRoyal, P.—*Das Erdöl in Mexico.* [On the petroleum resources of that country].—Zts. Internat. Vereines Bohringenieure June 15 1915; p 86; p 1; 35c.

McLaughlin, R. P.—*Protecting California Oil Fields from Damage by Infiltrating Water.*—A. I. M. E. Bull. Dec. 1915; p 2313; pp 8*; 35c.

Moore, F. F.—*The Petroleum Industry.* [A paper read before the National Petroleum Assn. Sept. 15, 1915].—Oildom Nov. 1915; p 152; pp 2½; 30c.

Noth, Julius.—*Verbreitung der Erdölzone in den Karpathenländern und die Zukunft der Erdölgewinnung in denselben nach dem gegenwärtigen Kriege.* [The petroleum deposits of Carpathia and the working of them after the war].—Zts. Internat. Vereines Bohringenieure Dec. 1 1915; p 181; pp 4¾*; Dec. 15; p 191; pp 3¼*; 70c.

Phillips, W. B.—*Mineral Resources of Texas.* [Contains statistics on production, discussion of the counties and mining laws of the state].—Univ. of Texas Bull. 365; pp 320*.

Pratt, W. E.—*Petroleum and Residual Bitumens in Leyte, Philippine Islands.* [Discusses the geology, possibilities of occurrence, methods of prospecting, etc.]. Philip. Jnl. of Sci. July 1915; p 241; pp 39*; 50c.

Redwood, B.; Eastlake, A. W.—*Petroleum Technologists' Pocket Book.* [Has maps and methods for drilling, prospecting, testing, etc.].—J. B. Lippincott Co.; pp 454*; $3.

Smith, George Otis.—*Mid-Year Review of Mining Industry,* 1915. [Takes up the various metals separately, giving their current production, quality and prices current. The metals taken are those of copper, lead, gold, tungsten, iron, coal, petroleum and their associates. After the facts are revealed a general discussion of the situation is taken up].—Mg. World July 10 1915; p 58; pp 7; 10c.

Wegemann, C. H.—*A Reconnaissance in Palo Pinto County, Texas.* [Discusses features which indicate the presence of commercial oil and gas pools].—U. S. G. S. Bull. 621-E; pp 9*.

Wegemann, C. H.; Heald, K. C.—*The Healdton Oil Field, Carter County, Oklahoma.* [A description of the features in this producing field].—U. S. G. S. Bull. 621-B; pp 18*.

Woodworth, R. B.—*The Development of the Steel Drilling Rig.* [A paper read before the American Petro. Soc.].—Western Engg. Dec. 1915; p 240; pp 4½; 35c.

——— *Air Sandwich Cuts Oil Loss.* [By using hollow clay tiles the factor of evaporation is diminished].—B. & C. Rec. Nov. 16 1915; p 755; pp 2*; 30c.

——— *Annual Report of the Mexican Petroleum Co., Ltd., of Delaware, and Its Subsidiaries.* [The Huasteca Petroleum Co. is also taken up and the production and financial statements of each are given].—Fuel Oil Jnl. Aug. 1915; p 8; pp 8; 35c.

——— *Baku Russian Petroleum.* [In general on the production and conditions prevailing there on the coasts of the Caspian sea, Asia Minor].—Petro. World Nov. 1915; p 559; pp 2; 35c.

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CHAPTER XI.

Structural and Ceramics.

BRICK AND TILE

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——— *A Shale Planer that Was Home Made.* [A description of the planer which is now being used in Iowa shale pits].—B. & C. Record Sept. 21, 1915; p 432; pp 2*; 30c.

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Boero, J.—*The Manufacture of Hydraulic Lime in America.* [Commences with the quality of the stone and fuel, then takes up the kiln, hydration and screening of the final product. Analytical results of hydraulic lime are also given]. National Lime Mfg. Assn. Bull. 16; pp 13.

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Gilbert, L. D.—*Southwestern Portland Cement Co., Texas.* [The plant and quarry whose operations are described are located at El Paso, Texas].—Mg. & Oil Bull. Oct. 1915; p 265; pp 6½*; 25c.

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CONCRETE

Casler, M. D.—*Simplified Reinforced Concrete Mathematics.* [A compilation of useful working formulae].—Van Nostrand; pp 66*; $1.

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Concrete Demands Knowledge of Sands. [The relation of the sand to the concrete is here discussed].—Sibley Jnl. of Engg. Dec. 1915; p 105; pp 6*; 30c.

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——— *Electricity in Sand and Gravel Plants, Massachusetts.* [Treats on the employment of this agent in both excavating and transporting the materials].—Elect. Rev. & West. Elect. Oct. 2 1915; p 599; pp 4*; 20c.

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——— *Schwimmsand im Bohrschacht.* [The theory and practice followed on encountering quicksand in drill holes].—Kali, Erz & Kohle Aug. 5 1915; p 256; pp 2; 35c.

——— *The Plant of the Atwood-Davis Sand Co., Beloit, Wis.* [Excavating in the pit is here taken up in detail].—Excavating Eng. Aug. 1915; p 409; pp 4*; 20c.

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Fay, A. H.—*Quarry Accidents in the United States During* 1914. [With some discussion, the paper consists of tables showing accidents which occurred].—U. S. Bur. of Mines Tech. Paper 128; pp 45.

Girty, G. H.—*The Fauna of the Batesville Sandstone of Northern Arkansas.* [The fauna consists mostly of shell animals].—U. S. G. S. Bull. 593; pp 170*.

Girty, G. H.—*Fauna of the So-Called Boone Chert Near Batesville, Arkansas.* [Shell organisms make up the fauna].—U. S. G. S. Bull. 595; pp 45*.

Hamilton, Fletcher.—*Mineral Production of California in* 1914. [In the case of each mineral, references for more detailed information, production and a review are given, with an appendix on the mining laws of the state].—Cal. Bur. of Mines Bull. 70; pp 184*.

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CHAPTER XII.

Other Non-Metals.

ABRASIVES

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ACIDS

Armstrong, C. G.—*Molybdic Acid Recovery.* [A synopsis of the process used for getting molybdic acid from molybdenum oxide and other waste material].—Jnl. of Indst. & Engg. Chem. Sept. 1915; p 764; pp 1*; 60c.

Hoffman, A.—*Beitrag zur Kenntnis der Verunreiningungen der Metallurgischen Kemmerschwefelsäure.* [A continuation of an article on the manufacture of sulphuric acid from zinc and iron sulphides].—Metall & Erz Aug. 8 1915; p 310; pp 7½; 50c.

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Randall, M.; Scalione, C. C.—*A Rapid Precise Standardization of Acid Solutions.*—Met. & Chem. Engg. Nov. 1 1915; p 787; pp ¾; 20c.

ALKALIS

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Phalen, W. C.—*The Production of Salt, Bromine, and Calcium Chloride in* 1914. [Reviews the same by states and the United States].—Min. Res. of U. S. II:20; pp 16*.

ASBESTOS

Diller, J. S.—*The Production of Asbestos in* 1914.—Mineral Res. of U. S. 11:9; pp 10.

Dufault, S.—*Report on Mining Operations in the Province of Quebec,* 1914. [Reviews the asbestos, mineral paint, copper, mica, cement industries, etc., for the year].—Dept. of Mines, Quebec; pp. 147.

Roush, G. A.—*The Mineral Industry, Its Statistics, Technology and Trade During* 1914. [The production and general current conditions of the market are discussed and in many instances information is given regarding methods of operation in the industry. There are special chapters, among which is one on flotation].—McGraw-Hill Vol XXII; pp 998; $10.

———*Mining in the Province of Quebec During the First Six Months of* 1915.—Bull. Canadian Mg. Inst. Sept. 1915; p 649; pp 3; 35c.

ARSENIC

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BARYTES

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Roush, G. A.—*The Mineral Industry, Its Statistics, Technology and Trade During* 1914. [The production and general current conditions of the market are discussed and in many instances information is given regarding methods of operation in the industry. There are special chapters among which is one on flotation].—McGraw-Hill Vol XXII; pp 998; $10.

BAUXITE

Phalen, W. C.—*The Production of Aluminum and Bauxite in* 1914. [Treats on processes used in refining aluminum and gives figures on the production of the mineral and metal].—Min. Res. of U. S. I:7; pp 27*.

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Andersen, Olaf.—*Aventurine Feldspar.* [A macro and microscopic study of the peculiarities of the crystals].—American Jnl. of Sci. Oct. 1915; p 351; pp 49*; 60c.

Bleininger, C. S.; Kinnison, C. S.—*The Viscosity of Porcelain Bodies High in Feldspar.* [A number of tests revealing that the molten material is made more fluid with a higher content of feldspar].—U. S. Bur. of Stand. Tech. Paper 50; pp 7*.

Katz, F. J.—*The Production of Feldspar in* 1914. [Takes up the year's production and conditions of the industry].—Min. Res. of U. S. II:27; pp 6.

——— *American Potash.* [A review of processes for obtaining potash, fertilizer from sugar and cement residue, kelp, feldspar, or secondary salt deposits].—Amr. Fertilizer Oct. 16 1915; p 38; pp 5½*; 25c.

FLUORSPAR

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Lunt, H. F.—*A Fluorspar Mine in Colorado.* [Confined to the geology of the deposits].—M. & S. P. Dec. 18 1915; p 925; pp 1½*; 20c.

FERTILIZERS

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——— *International Movement of Fertilizers.* [Takes up the production, exports and imports with prices of sulphur, potash and other fertilizing materials].—International Inst. of Agric. Sept. 1915; pp 36.

FULLER'S EARTH

Middleton, J.—*The Production of Fuller's Earth in* 1914.—Mineral Res. of U. S. 11:3; pp 6.

GEMS

Boise, C. W.—*Diamond Fields of German Southwest Africa.* [The topography, nature of the deposits and method of concentrating, from the Mg. Mag.].—S. Afr. Mg. Jnl. July 17 1915; p 468; pp 1; 35c.

Calvert, A. F.—*Mineral Resources of Minas Geraes, Brazil.* [The main deposits are of commercial iron, but gold, mica and gems are also found here in commercial quantities].—Spon & Chamberlain; pp 100*; $2.

Harder, E. C.; Chamberlin, R. T.—*The Geology of Central Minas Geraes, Brazil.* [A general review is made at length regarding the manganese, iron, diamond and gold deposits].—Jnl. Geol. Aug. 1915; p 385; pp 40*; 75c.

Moses, A. J.—*Tables for the Determination of Gems and Precious Stones, Without Injury to the Specimen.* [Includes microscopic and physical tests].—School of Mines Qrt. April 1915; p 199; pp 34; 60c.

Sterrett, D. B.—*Gems and Precious Stones in* 1914. [Each stone is taken up and a brief description of its occurrence in the various states is given. After this follows a review of the foreign and domestic industry and production].—Min. Res. of U. S. II:21; pp 40.

Williams, G. F.—*Mining Methods at Kimberley.* [A historical sketch of the early methods is brought to view and followed by an outline of the present method for working the ground, including supports, tramming, etc.].—Mg. Mag. July 1915; p 19; pp 9*; 50c.

——— *Annual Report of the South African Mines Department for* 1914. [Reviews the mining industry of copper, tin, gold, gems and coal, giving figures on their respective productions].—S. Afr. Mines Dept.

——— *Mining Prospects in German Southwest Africa.* [Tells of the diamond, copper, tin and coal prospects].—South Afr. Mg. Jnl. June 12 1915; p 359; pp 1½; 35c.

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——— *South Africa's Outlook.* [Deals with the production of their tin, copper, gold, gems, etc.].—Mg. Jnl. Sept. 18 1915; p 663; pp 2; 35c.

——— *Survey's Summary of the Precious Stones Industry,* 1882-1914.—Mg. World Dec. 25 1915; p 1019; pp 2; 10c.

——— *Transvaal Chamber of Mines Annual Report,* 1914. [Giving laws, labor conditions, production, sanitation, etc., as

found on the Transvaal, S. Afr.].—Johannesburg, S. Afr.; pp 500*.

GRAPHITE

Bartley, Jonathan.—*Can Profits Be Made in Graphite?* [In which a general review of the graphite industry is taken up, and it is shown why it is so unprofitable. The author presents a remedy for this situation by having the mines manufacture their own raw product instead of selling it in the raw state].—Iron Age July 8 1915; p. 86; pp. 2¾; 30c.

Bastin, E. S.—*The Production of Graphite in* 1914.—Mineral Res. of U. S. 11:14; pp 16.

Dolbear, S. H.—*Non-Metallic Products.* [An account giving general information and uses of the minerals dolomite, quartz, pumice, magnesite, etc.].—M. & S. P. Oct. 16 1915; p 599; pp 2; 20c.

Donath, E.; Lang, A.—*Ueber die Untersuchung und Wertbestimmung des Graphits.* [An investigation on the quality and value of various kinds and grades of graphite giving places in which it occurs].—Montanist. Rund. Oct. 1 1915; p 653; pp 4; Oct. 16 1915; pp 683; pp 4; 70c.

——— *Increased Value of Graphite Production.* [U. S. G. S.].—Mg. World Oct. 9 1915; p 564; pp ½; 10c.

GYPSUM

Loughlin, G. F.—*The Gypsum Industry in* 1914.—Mineral Res. of U. S. 11:17; pp 10.

Udden, J. A.—*The Age of the Castile Gypsum and the Rustler Formation.* [Positions of the various formation of the country in regard to the gypsum deposits].—Amr. Jnl. of Sci. Aug. 1915; p 151; pp 6*; 60c.

MAGNESITE

Dolbear, S. H.—*Non-Metallic Products.* [Reviews the refining of and general industry regarding kaolin, borax, manganese and magnesite].—M. & S. P. July 10 1915; p 56; pp 2; 20c.

Falck, G. E.—*Materiali Refrattari di Magnesite.* [A discussion and analyses of magnesite].—Metallurgia Ital. Oct. 30 1915; p 608; pp 5; $1.

Yale, C. G.; Gale, H. S.—*The Production of Magnesite in* 1914. [A general review of the industry, the metal produced and the uses, tariff regulations and new deposits].—Min. Res. of U. S. II:30; pp 18.

MICA

Calvert, A. F.—*Mineral Resources of Minas Geraes, Brazil.* [The main deposits are of commercial iron, but gold, mica and gems are also found here in commercial quantities].—Spon & Cham-

Hayden, H. H.—*Presidential Address.* [An address made to the Mining and Geological Institute of India on the mineral production and conditions of the industry in India].—M. & G. Inst. of Ind. June 1915; p 14; pp 21*; 50c.

Sterrett, D. B.—*The Production of Mica in* 1914. [On the production of and location of deposits].—Mineral Resources U. S. II:7; pp 11.

——— *Kupferextraktion aus Kiesabbränden in Pernau, Livland.* [Contains a flow sheet and a combination thermic and hydro-metallurgical method for extracting copper from pyrite waste].—Metall & Erz Sept. 22 1915; p 379; pp 15*; 50c.

——— *Mining in the Province of Quebec During the First Six Months of* 1915.—Bull. Canadian Mg. Inst. Sept. 1915; p 649; pp 3; 35c.

NITRATES

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Koenig, Adolf.—*Uber die Elektrische Aktivierung des Stickoffs.* [The electrical activity of nitrates].—Zts. Elektrochemie June 1 1915; p. 267; pp. 21*; 45c.

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PART III.

TECHNOLOGY.

MINES AND MINING (a*).

CHAPTER XIII.

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Brown, G. E.—*Prospecting in the Eastern Tropics.* [Reviews the various things to be encountered in the East Indies and Malay States].—Mg. Mag. July 1915; p 28; pp 5*; 50c.

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George, H. C.—*The Wisconsin Zinc District.* [Methods of mining the ore bodies, prospecting them, drilling and hoisting are described].—E. & M. J. Aug. 28 1915; p 341; pp 3½*; 25c.

Haggen, E. A.—*Mineral Prospects on Indian River, B. C.* [Describes various new claims in the district].—Mg. Engg. & Elect. Rec. Sept. 1915; p 166; pp 1¾; 35c.

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*(a) Includes Prospects and Prospecting, Surveying and Drafting, Drilling and Boring, Sampling, Explosives and Blasting, Shafts and Shaft Sinking, Lighting and Signalling, Pumps and Pumping, Tunnels and Tunneling, Mine Gas, Mine Water, Mine Temperature, Ventilation, Supports, Hoists and Hoisting, Dredging, Power Shovels and Excavators, Hydraulic Mining, Mining Costs and Miscellaneous.

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Hopkins, P. E.—*The Kowkash Gold Area.* [Gives the canoe routes, history and geology of the district].—Canadian Mg. Jnl. Oct. 1 1915; p 583; pp 2*; 35c.

Howell, R. W.; Wegemann, C. H.—*The Lawton Oil and Gas Field, Oklahoma.* Deals with the geology, methods of prospecting and a general review of the district].—U. S. G. S. Bull. 621-G; pp 15*.

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King, Oliver.—*Mining Prospects of German East Africa.* [Treats on the geology, history, transportation, prospecting and other items of interest in this field, which is untouched and offers many difficulties to the prospector].—S. Afr. Mg. Jnl. Nov. 27 1915; p 289; pp 2; 35c.

Knopf, A.—*Some Cinnabar Deposits in Western Nevada.* [Deals with the geological, historical, prospecting and other features of the district].—U. S. G. S. Bull. 620-D; pp 10.

Lakes, Arthur.—*Notes on Mining and Prospecting in British Columbia.* [Speaks of the formation in regard to the deposition of ore].—Mg. Engg. & Elect. Rec. Sept. 1915; p 161; pp 3; 35c.

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Rogers, R. F.—*The Iron Ore Deposits of Lewis County, Tennessee.* [A description of the geological formation and ore genesis with the mines and prospects described separately].—Resources of Tenn. July 1915; p 91; pp 56*.

Spearman, Charles.—*The Kowkash District, Ontario.* [A prospecting, canoe trip into the gold camp, describing the same, together with the geological formation].—Canadian Mg. Jnl. Oct. 1 1915; p 585; pp 3½*; 35c.

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Wolff, J. F.—*Orebodies of the Mesabi Range, Michigan.* [Methods for exploring the orebodies. Combination churn and diamond drill outfit used, also system for placing the holes].—E. & M. J. July 31 1915; p 178; pp 8*; 25c.

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Austin, H. C.—*A New Method of Putting in Survey Stations.* [A machine for drilling spud holes in the roof of the drift].—Coal Age Nov. 20 1915; p 832; pp 1½*; 20c.

Ball, L. C.—*The Mount Taylor Gold Mine, Kingston, Australia.* [Deals with the geology, history, mine workings and ore reserves].—Queensland Mg. Jnl. June 15 1915; p 262; pp 3½*; 35c.

Bowen, H. P.—*Engineering Notes and Methods at Miami.* [Tells of underground surveying methods, the use of tapes, the computing of bearings by azimuth and mapping and office work on survey notes].—E. & M. J. July 3 1915; p 15; pp 2½; 25c.

Cheney, C. A., Jr.—*What the Dip Needle Can and Cannot Do.* [Some of its uses are here brought out in regard to locating iron ore deposits].—E. & M. J. July 31 1915; p 193; pp 1½; 25c.

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Lakes, Harold.—*Glass Mine Models in Mine Work.* [Glass sections cut to correspond with the contours and the profile view of underground workings drawn on].—Oct. 30 1915; p 683; pp 2½*; 10c.

Lineham, W. J.—*A Treatise on Hand Lettering for Engineers, Architects, Surveyors and Students of Mechanical Drawing.*—Chapman and Hall, London; pp 282*; $2.35.

Marshall, R. B.—*Results of Spirit Leveling in Missouri.* [Gives the location and elevation of all bench marks].—U. S. G. S. Bull. 568; pp 218.

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Spencer, H. H.—*Permissible Explosives Tested Prior to July* 1 1915. [Abst. from Technical Paper No. 100, U. S. Bureau of Mines].—C. Tr. Bull. Aug. 2 1915; p 47; pp 3½; 25c.

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Weston, E. M.—*Practical Mining on the Rand.* [A series of lectures given practical

men on stoping, drilling, blasting, driving drifts, etc.].—Pub. by Author at Johannesburg; pp 55*.

Wright, Clarence A.—*Mining Methods in the Wisconsin District.* [Gives the nature of the deposits, method of tramming, blasting, drilling, hoisting, pumping, timbering and the way in which the shafts are handled; U. S. Bureau of Mines paper].—Mg. World July 3 1915; p 10; pp 4½*; 10c.

——— *Accidents from Explosives in* 1914. [Synopsis of the 39th annual report of the English Gov't Inspt.].—Coll'y Guard, Sept. 3 1915; p 470; pp 1; 35c.

——— *Handling Explosives in Mines.* [Discussion in letter form].—Coal Age Oct. 23 1915; p 684; pp 1; 20c.

——— *Mining Statistics for the Union of South Africa for September,* 1915.—S. Afr. Engg. Nov. 1915; p 86; pp ⅔; 35c.

——— *Pennsylvania District Mine Inspector Issues Instructions to Mine Officials.* [Is a letter from the inspector of the seventh bituminous district, warning and reviewing for officials the accidents which occurred, their cause and means for avoiding the same].—Coal Tr. Bull. July 1 1915; p 37; pp 1; 25c.

——— *Safety in Mining.* [Is a general review of the discussion on the subject at the meeting of the Industrial Accident Commission].—M. & S. P. Aug. 7 1915; p 201; pp 4*; 20c.

——— *The G. M. E. Reviews the Causes of Rand Accidents.* [The accidents are those which have occurred with explosives, timbering and spillage boys].—S. Afr. Mg. Jnl. Aug. 14 1915; p 558; pp 1; 35c.

——— *Transactions of the American Institute of Chemical Engineers.* [A compilation of various papers read at their meetings].—Van Nostrand; pp 268*; $3.

SHAFTS AND SHAFT SINKING

Black, James.—*Forming a Shaft Pillar in Thin Seams.* [A paper read before the Mg. Inst. of Scotland].—I. & C. Tr. Rev. Dec. 17 1915; p 739; pp 1*; 35c.

Broan, J. M.—*Sinking the Woodbury Shaft, Michigan.* [A paper read before the L. S. M. I.].—M. & S. P. Nov. 13 1915; p 734; pp 2½*; 20c.

Brown, G. E.—*Prospecting in the Eastern Tropics.* [Reviews the various things to be encountered in the East Indies and Malay States].—Mg. Mag. July 1915; p 28; pp 5*; 50c.

Burr, F. L.—*The Steel Headframe at No. 9 Shaft, Republic Mine, Vulcan, Mich.* [100-ft. headframe with sheaves in tandem was constructed in 7 weeks and cost $8400].—E. & M. J. Sept. 4 1915; p 379; pp 4*; Sept. 11 1915; p 430; pp 5*; 50c.

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Cromwell, R. H.—*Steel Shaft Timbering at Los Ocotes Mine.* [From the Columbia School of Mines Quart. The shaft of this copper mine, located in Mexico, is 800 ft. deep].—Mg. World Sept. 25 1915; p 479; pp 1½*; 10c; M. & S. P. Oct. 2 1915; p 519; pp 1½*; 20c.

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Evans, J. H.; George, Glen.—*Supporting Shaft Sides Through a Fault.* [From transactions of the Mg. & Geol. Inst. of India].—Coll'y Guard. Aug. 27 1915; p 418; pp 1*; 35c.

Gillieaux, M.—*Lining Shafts with Concrete Z-Blocks.* [From the proceedings of the Mg. Inst. of Scotland. The lining is made in segments of a circle and is to be used mainly in circular perpendicular shafts].—S. Afr. Engg. Aug. 1915; p 35; pp 3*; 35c.

Goodwin, L. Hall. — *Shaft-Rockhouse Practice in the Copper Country, Michigan.* [Has a complete description of the four methods of handling the rock and ore in the copper country, also sectional drawings showing the structure of the buildings].—E. & M. J. July 3 1915; p 7; pp 5½*; 25c.

Hart, W. C.—*Open-Pit Mining on Gogebic Range, Mich.* [A description of the operations in general; from L. S. M. I.].—I. Tr. Rev. Sept. 16 1915; p 523; pp 2½; 25c.

Hayden, J. E.—*Fast Driving in a Michigan Iron Mine.* [A paper read before the L. S. M. I. on methods of blasting, cost, haulage and drilling].—M. & S. P. Dec. 11 1915; p 885; pp 2*; 20c.

Hyde, M. L.—*Modern Mine-Plant Design.* [Deals with surface equipment as power, hoists, powder house, etc.].—Coal Age Nov. 13 1915; p 790; pp 4½*; 20c.

Johnson, R. G.—*An Interesting New*

Pennsylvania Coal Mine. [Confined to a general description of the property and the shaft with its hoisting machinery].—Coal Age Oct. 16 1915; p 631; pp 2*; 20c.

Linke, H. A.—*Cost of Sinking 900-Ft. Shaft, Nevada.* [An exploratory shaft 9x 5 ft., for which an itemized cost account is given].—E. & M. J. Nov. 20 1915; p 845; pp 2*; 25c.

McDonald, P. B.—*Heavy Timber Construction.* [Headframes at the iron mines of northern Michigan].—M. & S. P. Dec. 25 1915; p 972; pp 2*; 20c.

McDonald, P. B.—*Sinking a Shaft.* [Concrete shaft linings and sinking in quicksand are the principles for review. The practice is that found in the iron country of Michigan].—Canadian Mg. Jnl. Sept. 1 1915; p 524; pp 2*; 35c.

McIntosh, F. K.—*Shaft Sinking in a Michigan Iron Mine.* [Gives a method of procedure, with some costs, where a pentice is not used].—Mg. World Dec. 11 1915; p 933; pp 1¾*; 10c.

Palmer, L. A.—*Shaft-Sinking with Jackhamers.* [Deals with operations at mines on the Mother Lode in California, giving methods of drilling, etc.].—E. & M. J. Oct. 9 1915; p 598; pp 1¾*; 25c.

Poole, G. G. T.—*Preventive of Over-Winding and Over-Speeding in Shafts.* [Paper read before the Inst. of M. and Mech. Eng. in the North of England].—Coll'y Eng. Aug. 1915; p 20; pp 2*; 30c.

Reigart, J. R.—*Grouting in a Shaft.* —[Abst. from a paper read before the L. S. M. I.].—M. & S. P. Dec. 4 1915; p 859; pp 3½*; 20c.

Royce, Stephen.—*Use of Gunite in Underground Mine Work.* [From the proceedings of the L. S. M. I. The material is a cement mixture blown onto the part to be treated with compressed air through a hose].—Mg. World Sept. 25 1915; p 475; pp 2*; 10c.

Rutledge, J. J.—*Observations and Experience in Mine-Inspection Work.* [A paper read before the Mine Inspectors' Inst. of U. S.].—Coal Age Dec. 11 1915; p 969; pp 2¾; 20c.

Spriggs, A. E.—*Dynamite Explosion at Granite Mountain Shaft, Butte, Montana.* [600 lbs. of dynamite exploded while ready to be lowered and 16 were killed].—Mg. World Nov. 6 1915; p 735; pp 1; 10c.

Tupper, C. A.—*Calumet & Arizona Co., Warren Minnig District, Arizona.* [A review of the company's equipment and property].—Mg. World Dec. 11 1915; p 927; pp 2½*; 10c.

Wright, Clarence A.—*Mining Methods in the Wisconsin District.* [Gives the nature of the deposits, method of tramming, blasting, drilling, hoisting, pumping, timbering and the way in which the shafts are handled; U. S. Bureau of Mines paper].—Mg. World July 3 1915; p 10; pp 4½*; 10c.

——— *Illinois Coal Mine Shafts Sunk Subsequent to 1913 Must Be Fireproofed.* [Illustrates fireproof structure and tells of the law].—Mg. World Dec. 4 1915; p 899; pp 2*; 10c.

——— *Method and Cost of Grouting a Water-Bearing Fissure and Seamy Rock in Sinking a Mine Shaft.* [Condensed from a paper read before the L. S. M. I.].—Engg. & Cont. Nov. 3 1915; p 353; pp 2⅓*; 20c.

——— *Shaft Construction in a Kaolin Mine.*—Mg. World Nov. 13 1915; p 772; pp 1*; 10c.

——— *The West Cannock Sinkings, England.* [A review of the visit paid by the National Assn. of Coll'y. Eng.].—I. & C. Tr. Rev. Aug. 27 1915; p 254; pp 2*; 35c.

LIGHTING

Balliet, Letson.—*Inefficiencies of Poor Lighting.* [Compares the costs of carbide, candles and electricity, giving some of his experiences with the same].—S. L. Mg. Rev. July 30 1915; p 16; pp 2; 25c.

Burrows, R. P.—*Illumination of Mines.* [Has to do with electric illumination and gives some information on costs].—A. I. M. E. Bull. Nov. 1915; p 2237; pp 9*; 55c; Mg. World Nov. 6 1915; p 729; pp 3¾*; 10c.

Campbell, C. M.—*Underground Lighting in Mines.* [Covers the general practice in the use of miners' lamps in the copper mines of British Columbia].—Canadian Mg. Inst. Bull. Sept. 1915; p 674; pp 2; 35c.

Clark, H. H.—*Portable Electric Mine Lamps.* [A paper read before the West Virginia Coal Mg. Inst.].—C. Tr. Bull. Aug. 16 1915; p 41; pp 2; 25c.

Coppock, J.; Lodge, G. A.—*Introduction to Mining Science.* [A book on the principles of mining, dealing mostly with ventilation and safety lamps].—Longmans Green & Co. London; pp 230*; 60c.

Paul, J. W.—*Notes on Miners' Carbide Lamps.*—C. Tr. Bull. Oct. 1 1915; p 40; pp 3; 25c.

Stevenson, John.—*Flame Safety Lamps and Electric Lamps for Use in Mines.* [Compares the electric and flame type of lamps as safety lamps for use in coal

mines. Various experimental work is cited in both cases].—Canadian Mg. Inst. Bull. July 1915; p 524; pp 7; 35c.

Walker, H.—*Coal Mines Inspection in 1914, Scotland.* [From the Scotland Mines Dept. report showing production accidents, etc.].—Coll'y Guard. Sept. 10 1915; p 521; pp 2½; 35c.

——— *A New Electric Safety Lamp.* [A type of hat lamp remodeled after the design of the one which took first prize at a recent British competition].—Coal Age Aug. 7 1915; p 218; pp 2½*; 20c.

——— *Benzine Substitutes for Safety Lamps.* [Tells of experimental work conducted by Germans for the purpose of finding benzine mixtures which will serve in the place of benzine in safety lamps as benzine is becoming expensive in that country].—Coll'y Eng. July 1915; p. 656; pp. 1; 30c.

——— *Canadian Mining Institute—Western Branch.* [Twentieth general meeting at Rossland, B. C., July 15, 1915] —Canadian Mg. Jnl. Aug. 1 1915; p 467; pp 1; 35c.

———*Cost of Upkeep of Electric Cap Lamps.* [The cost at the Keystone Coal & Coke Co. was 1 ct. per lamp per shift]. —Coal Age Oct. 2 1915; p 543; pp 2*; 20c.

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TELEPHONES AND SIGNALING

Cartlidge, Oscar.—*Mine Rescue Signaling Device.* [An electric cable as used at the Superior Coal Mines, Illinois].—Coal Age Oct. 2 1915; p 540; pp 1*; 20c.

Davis, W. H.—*Winding-Engine Signals.* [A device for showing the signal given as to the nature of the hoist for the engineer].—Coll'y Eng. Sept. 1915; p 83; pp 2*; 30c.

Freeman, W. C.—*Mine Telephone Equipment.* [A detailed discussion of various systems].—Coal Age Dec. 18 1915; p 1007; pp 3*; 20c.

Thornton, W. M.—*A New Battery Signalling Bell.* [A paper read before the North of England Inst. of Mg. and Mech. Eng.].—I. & C. Tr. Rev. Aug. 13 1915: p 191; pp 1⅓*; 35c.

PUMPS AND PUMPING

Bowie, C. P.—*Pumping California Crude Oil.* [Describes methods for laying out pipe lines and pumping stations]. —Engg. News Dec. 2 1915; p 3¾*; 25c.

Calvert, A. F.—*Salt in Cheshire, England.* [Deals with the geology of the deposits and methods used in working them, including the pumping of brine from underground].—E. & F. N. Spon; pp 1160*; $5.75.

Carpenter, H.—*Flooding and Recovery of the Astoria Tunnel.* [Takes up various methods of pumping for dewatering the tunnel].—Engg. News Oct. 14 1915; p 736; pp 4½; 25c.

Collins, E. A.—*Pumping at the Commonwealth Mine, Ariz.* [Gives details and costs].—M. & S. P. Nov. 20 1915; p 786; pp 3*; 20c.

Crozier, H. W.—*The Shell Oil Pipe Line.* [Complete details are given regarding the construction and operation of a 170-mile pipe line with pumping stations]. —Jnl. of Elect. Power and Gas Sept. 4 1915; p 161; pp 18*; 35c.

Ehrlich, M. W.—*Modern Centrifugal Pumps.* [Their efficiency and capacity]. Practical Eng. Sept. 1 1915; p 818; pp 2*; 20c.

Gibson, G. H.—*How Low Fixed Charges Favor Centrifugal Pumps.*— Engg. News Nov. 4 1915; p 886; pp 2½*; 25c.

Gilbert, B. — *Betriebserfahrungen mit Wasserhaltungsanlagen in grossen Teufen.* [Pumping water from great depths]. —Glückauf June 16 1915; p 615; pp 2*; 50c.

Guy, A. E.—*Genesis of the Centrifugal Pump.* [Gives an account of the historical operations which have resulted in the centrifugal pump of today].—Colo. Sci. Soc. p 49; pp 54*; 35c.

Holvek, J. E.—*Discharge Flow and Crank Effort in Various Pumps.*—Coal Age Aug. 14 1915; p 248; pp 2*; 20c.

Izod, E. G.; Rouillard, A. P.—*Centrifugal Pumping at the Durban Roodepoort Deep, Ltd.* [A paper read before the Assn. of Mg. Elect. Eng.].—I. & C. Tr. Rev. Dec. 3, 1915; p 681; pp 2⅓*; 35c.

Koneczny, Franz.—*Einige Betrieberfahrungen an Zentrifugalpumpen.* [A treatise on the application of centrifugal pumps].—Montanist Rundschau Aug. 1 1915; p 531; pp 4*; 35c.

Legrand, Chas.—*Mine Pumping.* [Details on the economic placing of pumps with their duties and advantages of different types].—A. I. M. E. Bull. Sept. 1915; p 1929; pp 7; 35c; Canadian Mg. Jnl. Oct. 1 1915; p 599; pp 3; 35c; C. Tr. Bull. Oct. 15 1915; p 43; pp 3½; 25c.

Legrand, Chas.—*Tests on Various Steam and Electrically Operated Pumps.* [The tests were made at the Old Dominion Copper property].—Mg. World Oct. 23 1915; p 652; pp 1; 10c.

Nickel, F. F.—*Direct-Acting Steam Pumps.* [Gives details in a general way in regard to the direct-acting type].—McGraw-Hill Book Co.; pp 254*; $3.

Pearl, H. I.; Green, Joe.—*Electrical Plant of the Wakefield Iron Co., Mich.* [Supplies 2 shafts. Turbo-generators provided with overload device to take up peak loads].—E. & M. J. Aug. 28 1915; p 349; pp 2¾*; 25c.

Price, W. Z.—*Dewatering an Anthracite Mine, Pa.* [Water from the river got into the working through a squeeze and is now going to be pumped and drained out. The mine was filled in 1900 and has not been worked since].—Coll'y Eng. Sept. 1915; p 87; pp 3*; 30c.

Rogers, T. J.—*Running a Duplex Pump with One Plunger.*—Pract. Eng. Nov. 1 1915; p 1012; pp 1*; 20c.

Spaulding, M. B.—*Early Mining History of Pachuca, Mexico.* [The history begins with 1551, giving the development of the country and its production. Also takes up the use of Cornish pumps and the Patio process].—Mexican Mg. Jnl. May 1915; p 169; pp 3*; 35c.

Wilson, W. O.—*Water Indicator Diagrams.* [A number of indicator test cards taken from several different pumps].—Pract. Eng. Nov. 1 1915; p 1013; pp 1¾*; 20c.

Wright, Clarence A.—*Mining Methods in the Wisconsin District.* [Gives the nature of the deposits, method of tramming, blasting, drilling, hoisting, pumping, timbering and the way in which the shafts are handled; U. S. Bureau of Mines paper].—Mg. World July 3 1915; p 10; pp 4½*; 10c.

——— *East Rand Proprietary Mines' Pumping Operations and Power Plant.* [The pumps work on an average lift of 4000 ft.].—Mg. World Sept. 11 1915; p 404; pp 1*; 10c.

——— *Turbine Pumps at a South Yorkshire Colliery.* [The pumps are being operated at Barnsley, England, by the Hodroyd Coal Co., Ltd.].—Coll'y Guard. July 23 1915; p 166; pp 1⅓*; 35c.

——— *Unwatering the Downtown District at Leadville, Colo.* [Mechanical details and methods are brought out here. The pumps handle 1500 gals. with 410-ft. head].—M. & S. P. Sept. 4 1915; p 355; pp 3½*; 20c.

TUNNELS AND TUNNELING

Carpenter, H.—*Flooding and Recovery of the Astoria Tunnel.* [Takes up various methods of pumping for dewatering the tunnel].—Engg. News Oct. 7 1915; p 673; pp 5*; Oct. 14 1915; p 736; pp 4½; 50c.

Hayden, J. E.—*Fast Driving in a Michigan Iron Mine.* [A paper read before the L. S. M. I. on methods of blasting, cost, haulage and drilling].—M. & S. P. Dec. 11 1915; p 885; pp 2*; 20c.

Higgins, W. C.—*The Daly-Judge Mine and the Snake Creek Tunnel, Utah.* [Takes up the geology and hoisting operations with a general description of the mines].—S. L. Mg. Rev. Oct. 30 1915; p 9; pp 6½*; 25c.

Josten, L. J.—*Machining and Molding Cast Tunnel Linings.* [Special machinery being used for this work].—Iron Age Dec. 2 1915; p 1279; pp 3½*; 30c.

Lauchli, E.—*Tunneling and Geology.* [The effects of various rock structures, jointing and bedding planes, on the shape and size of tunnels is brought out].—Canadian Eng. Sept. 16 1915; p 365; pp 6*; 35c.

Lauchli, E.—*Tunneling.* [Gives methods of driving and doing general tunnel work, including drilling methods and driving under difficulties].—McGraw-Hill Book Co.; pp 230*; $3.

Léwenheilm, H.—*Om Ortdrivning.* [Concerning methods of rock drilling for driving tunnels].—Jern-Kontorets Annaler July 15 1915; p 320; pp 13*; 50c.

McFarland, J. R.—*Rapid Tunnel Driving Under the Bonus System.* [Gives costs and description of several tunnels run in the United States].—Engg. News Aug. 26 1915; p 405; pp 1½; 25c.

Sheldon, T. H.—*Roosevelt Drainage Tunnel, Cripple Creek, Colorado.* [The tunnel is completed, 5 miles long, and is intended to drain several mines in the vicinity].—E. & M. J. Oct. 2 1915; p 545; pp 4*; 25c.

——— *Construction Progress on the Twin Peaks Tunnel.* [Also describes the methods used].—Engg. News Nov. 4 1915; p 869; pp 2¼*; 25c.

——— *East River Tunnel Shields.*—Engg. News Nov. 11 1915; p 952; pp 3½*; 25c.

——— *Methods Used in Building the Rogers Pass Tunnel.* [On the driving, drilling, power, etc., on a tunnel located in the Rockies of B. C.].—Engg. News Nov. 11 1915; p 920; pp 3¾*; 25c.

——— *New System of Concrete Lin-*

ing Specially Adaptable to Collieries. [An arched form made of segments].—I. & C. Tr. Rev. July 2 1915; p 7; pp 1⅓*; 35c.

——— *The Bonus System Applied to Tunnel Driving.* [Contains cost tables on various tunnels excavated].—E. & M. J. Sept. 25 1915; p 517; pp 1¼; 25c.

MINE WATERS

Campbell, J. R.—*Neutralizing and Softening Mine Drainage Water.* [Makes the water fit for boiler and domestic uses].—Coal Age Nov. 27 1915; p 874; pp 3*; 20c.

Donaldson, Francis.—*Permanent and Water-Tight Shaft Construction in Europe and United States.* [Paper read before the Engineer's Club of Philadelphia].—Mexican Mg. Jnl. April 1915; p 132; pp 1½; 35c.

Hart, W. C. — *Open-Pit Mining on Gogebic Range, Mich.* [A description of the operations in general; from L. S. M. I.].—I. Tr. Rev. Sept. 16 1915; p 523; pp 2½; 25c.

Legrand, Chas.—*Mine Pumping.* [A paper read at the San Francisco meeting of the A. I. M. E. on steam and electric pumps, air lifts, and tests on the same].—Canadian Mg. Jnl. Oct. 1 1915; p 599; pp 3; 35c; C. Tr. Bull. Oct. 15 1915; p 43; pp 3½; 25c.

Price, W. Z.—*Dewatering an Anthracite Mine, Pa.* [Water from the river got into the working through a squeeze and is now going to be pumped and drained out. The mine was filled in 1900 and has not been worked since].—Coll'y Eng. Sept. 1915; p 87; pp 3*; 30c.

Sheldon, T. H.—*Roosevelt Drainage Tunnel, Cripple Creek, Colorado.* [The tunnel is completed, 5 miles long, and is intended to drain several mines in the vicinity].—E. & M. J. Oct. 2 1915; p 545; pp 4*; 25c.

Williams, G. F.—*Mining Methods at Kimberley.* [A historical sketch of the early methods is brought to view and followed by an outline of the present method for working the ground, including supports, tramming, etc.].—Mg. Mag. July 1915; p 19; pp 9*; 50c.

——— *Method and Cost of Grouting a Water-Bearing Fissure and Seamy Rock in Sinking a Mine Shaft.* [Condensed from a paper read before the L. S. M. I.].—Engg. & Cont. Nov. 3 1915; p 353; pp 2⅛*; 20c.

——— *Unwatering the Downtown District at Leadville, Colo.* [Mechanical details and methods are brought out here. The pumps handle 1500 gals. with 410-ft. head].—M. & S. P. Sept. 4 1915; p 355; pp 3½*; 20c.

VENTILATION

Andros, S. O.—*Coal Mining in Illinois.* [Gives a complete account of the history, quality of product, mining ventilation, timbering, blasting, etc.].—Univ. Ill. Bull. 13; pp 250*.

Briggs, Henry.—*Uses for Underground Fans.* [From this discussion fans may be used to help out in the relay or made to be the primary factor].—Coal Age Sept. 4 1915; p 370; pp 3*; 20c.

Brown, J. F. K.—*Self-Acting Ventilation Door.* [A door which is opened by the approaching car and closed by gravity and the air current].—Coal Age Oct. 2 1915; p 545; pp 1½*; 20c.

Chalmers, G.—*Ventilating the World's Deepest Mine.* [The Morro Velho mine, Brazil, has to contend with deep mine ventilation which is here described at some length].—Canadian Mg. Jnl. Aug. 1 1915; p 462; pp 3*; 35c.

Coppock, J.; Lodge, G. A.—*Introduction to Mining Science.* [A book on the principles of mining, dealing mostly with ventilation and safety lamps].—Longmans Green & Co. London; pp 230*; 60c.

Cornet, F. C.—*Reminiscences in Ventilation.* [Recollections of French and Belgian engineers in regard to the testing of pneumatic ventilating appliances].—Coal Age Sept. 4 1915; p 382; pp 2*; 20c.

Crosby, F. B.—*Variable-Speed A.-C. Motors for Driving Mine Fans.* [A motor which is adjusted for varying speeds and does away with the single and double speed induction types].—Coal Age Sept. 4 1915; p 374; pp 2¾*; 20c.

Hackett, D. A.—*The Calibration of Anemometers.* [For measuring air quantity and velocity].—Coll'y. Eng. Sept. 1915; p 66; pp 1½*; 30c.

Harris, E. G.—*Orifice Measurements of Air in Large Quantities.* [Tests run at the Missouri School of Mines to determine the flow of air through orifices up to 30 in. in diameter or square].—Mo. School of Mines Bull. Nov. 1915; pp 18*.

Levin, N. D.—*A Protective System for Coal Mines.* [A means for clearing dead-ends with canvas pipe and blowers, thus preventing explosions].—Coll'y Eng. Oct. 1915; p 135; pp 2*; 35c.

Mather, T. A.—*Economy in Ventilating Mines With Purchased Power.* [Paying for power from an outside source has brought to view many unknown leaks in

previous power consumption].—Coal Age Sept. 4 1915; p 380; pp 1½; 20c.

Mitke, C. A.—*Ventilation of the Copper Queen Mine, Ariz.* [The method is one of natural, not mechanical ventilation].—A. I. M. E. Bull. Sept. 1915; p 1941; pp 18*; 35c.

Ryba, Gustav.—*Die Wetterführung bei Bränden und nach Sprengschlägen.* [Mine ventilation with fans].—Zts. Zentral-Verbandes July 15 1915; p 189; pp 3½*; 35c.

Ryba, Gustav. — *Sondereinrichtungen zur raschen Umkehrung der Grubenbewetterung.* [Is a treatise in German on forced ventilation]. — Montanist Rundschau July 16 1915; p 497; pp 6½*; 35c.

Walsh, J. J.—*Mining and Mine Ventilation.* [A practical handbook on the physics and chemistry of mining and mine ventilation, practical examples being given in application of the theory described].—Van Nostrand Co.; pp 180*; $2.

Whittome, Arthur C.—*The Influence of Moisture in the Air on Mine Ventilation.* [Abst. from a paper read before the S. Afr. Inst. Eng. on tests made covering the above topic].—I. & C. Tr. Rev. July 30 1915; p 127; pp 2⅓; 35c; Coll'y Guard. Aug. 6 1915; p 269; pp 1⅔; 35c. S. Afr. Engg. July 1915; p 14; pp 2; Aug. 1915; p 28; pp 1; 70c.

Winmill, W. F.—*Absorption of Oxygen by Coal.* [Tests showing the influence of temperature, moisture, etc., and the probability of spontaneous ignition].—Coll'y Eng. Oct. 1915; p 147; pp 6*; 35c.

——— *Copper Queen Mine Ventilating Doors.* [The doors are actuated by compressed air appliances].—Mg. World Oct. 30 1915; p 686; pp 1*; 10c.

——— *Is Rand Mine Ventilation Inadequate?* [Criticises underground conditions which are the cause of much discontent].—S. Afr. Oct. 2 1915; p 103; pp 1½; 35c.

——— *Methods of Working and Ventilation.* [A theoretical brief on the subject].—Sci. & Art of Mg. Aug. 28 1915; p 25; pp 2*; 35c.

———*Report of the Royal Commission on the Mining Industry at Broken Hill, New South Wales.* [Information on the general mining operations and sociological conditions in this lead-silver-zinc district]. Govt. Sydney, Aust.; pp 862*; $4.80.

SUPPORTS: PROPS, PILLARS, TIMBERS, STOWING, ETC.

Andros, S. C.—*Coal Mining in Illinois.* [Gives a complete account of the history, quality of product, mining ventilation, timbering, blasting, etc.].—Univ. Ill. Bull. 13; pp 259*.

Cazalet, P.; Lawrie, W. W.—*The Collapse and Recovery of the Bantjes Central Incline Shaft.* [The shaft caved from the soaking of a near-by dike from a heavy rain].—S. Afr. Mg. Jnl. Sept. 11 1915; p 33; ppl; Sept. 18 1915; p 59; pp 5*; 70c; Coll'y Guard. Nov. 5 1915; p 628; pp 1½*; 35c.

Cromwell, R. H.—*Steel Shaft Timbering at Los Ocotes Mine.* [From the Columbia School of Mines Quart. The shaft of this copper mine, located in Mexico, is 800 ft. deep].—Mg. World Sept. 25 1915; p 479; pp 1½*; 10c; M. & S. P. Oct. 2 1915; p 519; pp 1½*; 20c.

Dean, S.—*Modern American Coal-Mining Methods, with Some Comparisons.* [A paper read before the North of England Mining & Mechanical Engineers].—Sci. & Art of Mg. Oct. 23 1915; p 121; pp 3; 35c.

Evans, J. H.; George, Glen.—*Supporting Shaft Sides Through a Fault.* [From transactions of the Mg. & Geol. Inst. of India].—Coll'y Guard. Aug. 27 1915; p 418; pp 1*; 35c.

Fray, S., Jr.—*Steel Mine Timbering.*—Coal Age Nov. 6 1915; p 757; pp 1*; 20c.

George, H. C.—*The Wisconsin Zinc District.* [Methods of mining the ore bodies, prospecting them, drilling and hoisting are described].—E. & M. J. Aug. 28 1915; p 341; pp 3½*; 25c.

Gillieaux, M.—*Lining Shafts with Concrete Z-Blocks.* [From the proceedings of the Mg. Inst. of Scotland. The lining is made in segments of a circle and is to be used mainly in circular perpendicular shafts].—S. Afr. Engg. Aug. 1915; p 35; pp 3*; 35c.

Graham, H. R.—*Mining Methods at Braden, Chile.* [Abst. from Teniente Topics on the ore genesis, methods of development, stoping and caving].—E. & M. J. Nov. 20 1915; p 831; pp 1¾; 25c.

Gullachsen, B. C.—*Hydraulic Stowing in the Gold Mines of the Witwatersrand.* [A method for washing sand fill into old stopes].—S. Afr. Engg. July 1915; p 10; pp 3*; 35c.

Hall, R. D.—*Stresses in the Mine Roof.* [An article read at a meeting of the A. I. M. E.].—Coal Age Sept. 18 1915; p 460; pp 3½*; 20c; C. Tr. Bull. Sept. 15 1915; p 27; pp 3; 25c.

Higgins, Edward.—*Sheet-Ground Mining in the Joplin District.* [Reviews their method of prospecting, breaking ground, mining, haulage, etc.; abst. from A. I. M.

E. paper].—Mg. World Oct. 5 1915; p 523; pp 4*; 10c.

Morleck, A. G.—*Calculation of Mine Gangway Timbers in Coal Mining.* [An idea of the stresses in the timbers and methods for calculating sizes from these stresses].—Coal Age Nov. 20 1915; p 837; pp 1¾*; 20c.

Murray, R. M.—*Mining Methods at Mount Lyell, Australia.* [Some geology is described. The method in general is the shrinkage stoping method].—Proc. Aus. Inst. of M. E. N. S. No. 9 1915; p 125; pp 16*; 70c.

Rickard, T. A.—*Grass Valley Re-Visited.* [Takes up various points of interest regarding the methods of mining peculiar to the district, together with costs and production. A good explanation is given of a machine for testing the efficiency of air drills].—M. & S. P. July 3 1915; p 11; pp 3½*; 20c.

Williams, G. F.—*Mining Methods at Kimberley.* [A historical sketch of the early methods is brought to view and followed by an outline of the present method for working the ground, including supports, tramming, etc.].—Mg. Mag. July 1915; p 19; pp 9*; 50c.

Woodworth, R. B.—*Steel Mine Timbering Costs.*—Coal Age Nov. 20 1915; p 835; pp 1¾*; 20c.

Wright, Clarence A.—*Mining Methods in the Wisconsin District.* [Gives the nature of the deposits, method of tramming, blasting, drilling, hoisting, pumping, timbering and the way in which the shafts are handled; U. S. Bureau of Mines paper].—Mg. World July 3 1915; p 10; pp 4½*; 10c.

——— *Main Island Creek Coal Co., Omar, W. Va.* [A treatise on the social conditions and management of the mine with a description of their methods of haulage, mining and preparation for the market].—Elect. Mg. July 1915; p 49; pp 28*; 20c.

——— *Methods of Supporting Drives and Stopes at the Witwatersrand Mines.*—S. Afr. Engg. Oct. 1915; p 70; pp 1; 35c.

——— *Methods Used in Building the Rogers Pass Tunnel.* [On the driving, drilling, power, etc., on a tunnel located in the Rockies of British Columbia].—Engg. News Nov. 11 1915; p 920; pp 3¾*; 25c.

——— *The G. M. E. Reviews the Causes of Rand Accidents.* [The accidents are those which have occurred with explosives, timbering and spillage boys].—S. Afr. Mg. Jnl. Aug. 14 1915; p 558; pp 1; 35c.

HOISTS AND HOISTING

Aikens, Warren.—*Electric Power for Montana Mines, Mills and Smelters.* [Power is centralized at one station and delivered to the various mines of the district and the hoists are run with air instead of steam].—Mg. World July 31 1915; p 171; pp 5*; 10c.

Austin, E. P.—*Notes on Faults in Cables.* [A paper read before the A. I. E. E.].—Elect. Rev. Oct. 22 1915; p 540; pp 1½*; 35c.

Bach, C.—*Erfahrung über das Unbrauchbarwerden der Drahtseile.* [Notes on the useless origination of wire-rope].—Montanist. Rund. Nov. 1 1915; p 712; pp 5; 35c.

Baumann, D. F.—*Der Tragkraftüberschutz der Schachtförderseile.* [The variable surplus strength in hoisting ropes accompanied with curves].—Glückauf Aug. 14 1915; p 803; pp 4*; 50c.

Bennett, B. W.—*Wire Rope and Its Application.* [Abst. from a paper read before the Shamokin and Mt. Carmel Mining Inst.].—Coal Age July 17 1915; p 82; pp 4*; 20c.

Brown, J.; McCale, C. H.—*Laying out a Pit Bottom for an Indian Colliery.* [Tells of haulage systems and arrangements in shaft bottoms and throughout underground workings. A great deal of advantage is here taken of gravitational methods. There is also some consideration given here to the hoisting problem].—Trans. Mg. & Geol. Inst. of India March 1915; p. 20*; 60c.

Brown, R. E.—*The Alternating Current Coal Hoist.* [Paper read before the A. I. E. E. treating on a hoist which is operated by compressed air.].—C. Tr. Bull. Aug. 16 1915; p 55; pp 2; Sept. 1 1915; p 47; pp 2; 50c.

Burr, F. L.—*The Steel Headframe at No. 9 Shaft, Republic Mine, Mich.* [The details of construction and cost for erecting a modern steel headframe].—E. & M. J. Sept. 11 1915; p 430; pp 5*; 25c.

Davis, W. H.—*Winding-Engine Signals.* [A device for showing the signal given as to the nature of the hoist for the engineer].—Coll'y Eng. Sept. 1915; p 83; pp 2*; 30c.

Divis, Julius.—*Förder-Maschine für 1300 m Teufe und 2000 kg Nutzlast am Anna Schacte in Przibram.* [A hoist for 2000-kg. load and 1300-ft. distance at the

Anna shaft in the Przibram district, Germany].—Zts. Zentral Verbd. Bergbau Betriebsl. Nov. 15 1915; p 305; pp 3½; Dec. 1 1915; p 317; pp 4⅓*; 35c.

George, H. C.—*The Wisconsin Zinc District.* [Methods of mining the ore bodies, prospecting them, drilling and hoisting are described].—E. & M. J. Aug. 28 1915; p 341; pp 3½*; 25c.

Gibson, T. S.—*Proposal for Shaft Bottom Arrangements and Methods of Working in Deep Seams.* [Is a paper written by the president of the society on the problems which will be encountered in deep coal mines. It is suffixed with discussion of the paper regarding haulage and hoisting].—Trans. Mg. & Geol. Inst. of India March 1915; p. 98; pp. 9*; 60c.

Goodwin, Hall L. — *Shaft-Rockhouse Practice in the Copper Country.* [Here the Quincy practice of handling the rock is described as very elaborate in the handling of its mass copper by chutes. A complete detailed description is given with sectional drawings and plans].—E. & M. J. July 10 1915; p 53; pp 4*; 25c.

Green, Harold.—*Principles of Visual Signalling.* [A paper read before the Manchester Mg. & Geol. Soc. Many points on hoist signals are brought out, but the paper was intended to promote discussion].—Coll'y Guard. Dec. 24 1915; p 1288; pp 1; 35c.

Halbaum, H. W. G.—*The Winding Drums of Practice and Theory.* [A paper presented at the North of England Institute of Mining and Mechanical Engineers. Reviews various winding systems, drums and ropes in regard to their safety, economy and operation].—Coll'y Guard. June 25 1915; p 1323; pp 2*; July 2 1915; p 16; pp 2*; 70c.

Halbaum, H. W. G.—*Winding Drums and Winding Ropes.* [A paper presented at the North England Institute of Mining and Mechanical Engineers. Discusses and describes various kinds of ropes and hoisting drums as regards safety and economy. The paper is concluded with a page of discussion on the article].—I. & C. Tr. Rev. June 25 1915; p. 877; pp. 3⅓*; 35c.

Hay, T. R.—*Economics of the Central Station in Mining.* [Machinery is not described here, but a discussion is made of the use of electricity and arrangement of the equipment, what kind of equipment is necessary for various kinds of work and where savings can be initiated].—Coal Age July 10 1915; p 44; pp 4*; 20c.

Heidelberg, F. M.—*Concrete Underground Ore Pocket at Copper Queen Mine, Ariz.*—E. & M. J. Oct. 2 1915; p 559; pp 2¼*; 25c.

Higgins, W. C.—*The Daly-Judge Mine and the Snake Creek Tunnel, Utah.* [Takes up the geology and hoisting operations with a general description of the mines].—S. L. Mg. Rev. Oct. 30 1915; p 9; pp 6½*; 25c.

Howard, L. O.—*Hoisting Works in the Park City District, Utah.* [Electric hoists are described].—M. & S. P. Oct. 9 1915; p 545; pp 3*; 20c.

Howe, J. F.—*Wire Rope: A Factor in Steel Making.* [Abst. from a paper read before the Assn. of Iron and Steel Elect. Eng.].—I. Tr. Rev. Dec. 23 1915; p 1232; pp 6⅔; 25c.

Humes, J.—*The Silver Hill Underground Hoisting Station, Utah.* [An electrically operated system at the Silver King Coalition property in Utah].—E. & M. J. Nov. 6 1915; p 747; pp 4¾*; 25c.

Hyde, M. L.—*Modern Mine-Plant Design.* [Deals with surface equipment as power, hoists, powder house, etc.].—Coal Age Nov. 13 1915; p 790; pp 4½*; 20c.

Johnson, R. G.—*An Interesting New Pennsylvania Coal Mine.* [Confined to a general description of the property and the shaft with its hoisting machinery].—Coal Age Oct. 16 1915; p 631; pp 2*; 20c.

Macaulay, D. A.—*The Drumheller Coal Field, Alberta, Canada.* [Abst. from the bulletin of the Canadian Mg. Inst., with a complete description of the coal seams is given and also a self-dumping cage, with detailed drawings of the same].—Colly. Guard. Dec. 31 1915; p 1333; pp 1⅓*; 35c.

Mayer, Ralph W.—*Automatic Incline Devices.* [Some of the safety devices on the 4000 ft. incline of the Roslyn-Cascade Co. in Washington].—Coal Age July 24 1915; p 127; pp 2*; 20c.

McDonald, P. B.—*Mechanical Features at a Lake Superior Iron Mine.* [A balancing system used at the shafts of the Republic iron mine, Michigan].—M. & S. P. July 10 1915; p 50; pp 1½*; 20c.

Means, C. M.—*Canonsburg Gas Coal Co.'s Plant, Pa.* [Describes the hoist. Electricity is used throughout].—Coal Age Dec. 4 1915; p 921; pp 1¾*; 20c.

Netland, L.—*Comox Mines, Vancouver Island, B. C.* [Brings out the hydro-electric plant, electric hoist, and methods used for sizing, preparation, etc.].—Coll'y. Eng. Sept. 1915; p 59; pp 4½*; 30c.

Pfiffner, E.—*Stromwandler mit Kleiner Induzierter Spannung bei Offenem Sekundärstromkries.* [Describes and gives

theory on electric hoists].—Elektrotechnik und Maschinenbau June 13 1915; p 289; pp 2*; 50c.

Poole, G. G. T.—*Prevention of Over-Winding and Over-Speeding in Shafts.* [Paper read before the Inst. of M. and Mech. Eng. in the North of England].—Coll'y Eng. Aug. 1915; p 20; pp 2*; 30c.

Rider, J. H.—*Electric Winding in South Africa.* [A paper read before the I. of E. E. on using electric hoists at the mines in the Rand district, South Africa].—S. Afr. Mg. Jnl. May 29 1915; p. 321; pp. 1½; 35c.

Rosenblatt, G. B.—*Granite Mountain Hoist of the North Butte Mining Co., Montana.*—Mg. World Dec. 18 1915; p 967; pp 5¼*; 10c.

Sherman, G. F. G.—*Tramming and Hoisting at Copper Queen Mine, Ariz.* [Gives details regarding efficiency tests, methods of operation and costs in detail. Electric haulage is used].—A. I. M. E. Bull. Sept. 1915; p 1836; pp 51*; 35c.

Snyder, W. T.—*Direct-Current Control for Hoisting Equipment in Industrial Plants.* [A paper read before the A. I. Elect. Eng. dealing mostly with metallurgical plants].—Elect. Aug. 20 1915; p 733; pp 4*; 35c.

Stone, F. L.—*Mine-Hoist Calculations.* [Explanation of the balanced slope hoist calculations].—Coal Age Dec. 4 1915; p 916; pp 4¾*; 20c.

Sykes, Wilfred.—*A Large Electric Hoist at Butte, Mont.* [The shaft depth here is 4000 ft. and the net load handled is 14,000 lbs. with a maximum hoisting speed of 3000 ft. per minute].—A. I. E. E. Aug. 1915; p 1819; pp 9*; 35c; Canadian Eng. Sept. 9 1915; p 348; pp 1½; 35c; Elect. Oct. 1 1915; p 955; pp 2¼*; 35c.

Tupper, C. A.—*The Bisbee-Warren District—Copper Queen Mine.* [The property is described in general, giving a review of the transportation, haulage, hoisting and mining methods, with information on the test mill built there].—Mg. World Oct. 2 1915; p 515; pp 8*; 10c.

Wolf, W.—*Neuere Leonardschaltungen in Bergwerken.* [New electric hoists for mines as used in Germany].—Kali Nov. 15 1915; p 341; pp 6*; 35c.

Wright, Clarence A.—*Mining Methods in the Wisconsin District.* [Gives the nature of the deposits, method of tramming, blasting, drilling, hoisting, pumping, timbering and the way in which the shafts are handled; U. S. Bureau of Mines paper].—Mg. World July 3 1915; p 10; pp 4½*; 10c.

——— *A New Winding Signaling System.* [Reveals to the hoist operator what operation is being carried on with the skip, such as lowering men, timber, powder, etc.].—Coll'y Guard. July 9 1915; p 67; pp 1*; 35c.

——— *A Notable Electric Winder.* [Reference is made to the profile of a hoisting drum with regard to the work done, etc., also giving a description of some hoists now in operation].—Elect. Sept. 24 1915; p 909; pp 4*; 35c.

——— *A Slope Mine in Illinois.* [Loaded and empty car-hauls driven by an electric motor take the place of hoisting engines and cages].—Coal Age Sept. 25 1915; p 496; pp 1*; 20c.

——— *Electric Hoist of the Incline Railway at Hamilton, Ont., Canada.* [Gives a description of the incline road and the hoist itself. Figures giving detailed information regarding the equipment and method of operation will also be found].—Engg. News July 8 1915; p. 49; pp. 2*; 25c.

——— *Electric Underground Hoists for South African Mines.* [75 hp. geared hoists].—I. & C. Tr. Rev. July 2 1915; p 1; pp 1*; 35c.

——— *Ferro-Concrete Headgear and Heapstead at Bentley Colliery, England.* [Contains sectional drawings and illustrations].—I. & C. Tr. Rev. July 23 1915; p 97; pp 1½*; 35c.

——— *Hamilton Electric Incline Railway.* [Is an incline for handling people, freight, etc., at Hamilton Mountain Park, Ontario].—S. L. Mg. Rev. July 15 1915; p 13; pp 2*; 25c.

——— *Safety in Mining.* [Is a general review of the discussion on the subject at the meeting of the Industrial Accident Commission].—M. & S. P. Aug. 7 1915; p 201; pp 4*; 20c.

——— *South African Mining in* 1914. [Abst. from the South African Dept. of Mines Bull.].—Coll'y Guard. Sept. 10 1915; p 518; pp 1; 35c.

——— *The Lateral or Side Friction of Hoisting Ropes.* [A paper read before the North of England Inst. of M. and M. Eng.].—Coal Age Dec. 18 1915; p 1010; pp 1; 20c.

DREDGING

Earl, T. C.—*The Testing of Alluvials.* [An account of the author's own experience in prospecting methods for testing and proving up alluvial deposits of tin and gold].—Mg. Jnl. London; book; $1.75.

Ellis, H. I.—*Winter Mining at Fairbanks.* [Principally surface operations].—E. & M. J. Oct. 30 1915; p 707; pp 4½*; 25c.

Merrin, A. H.—*Annual Report on Dredge Mining and Hydraulic Sluicing in* 1914, *Australia.*—Govt. Printer, Melbourne, Australia; pp 16.

——— *Annual Report of the Smithsonian Institute for* 1914. [Contains several miscellaneous articles and one bearing directly on the gold deposits of the Yukon].—Washington D. C.; pp 729*.

——— *Development of Dredging in Yukon Territory, Alaska.* [Dredging started in 1899 and steam thawing is an important point].—E. & M. J. Dec. 25 1915; p 1039; pp 5¾*; 25c.

——— *Dredging in the Nome District, Alaska.* [Gives information on the current operations in 1914 and production data].—Mg. World Oct. 9 1915; p 570; pp 1; 10c.

POWER SHOVELS AND EXCAVATORS

Brooks, A. H., and Others.—*Mineral Resources of Alaska, Report on Progress of Investigations in* 1914. [Contains discussions and descriptions on the gold, copper, tin, mercury and iron deposits in Alaska].—U. S. G. S. Bull. 622; pp 380*.

Broughton, H. H.—*The Electric Crane Applied to the Handling of Coal and Ore.* [Details of electric cranes, etc., for handling mine stock piles].—Elect. July 23 1915; p 575; pp 4*; 35c.

Eakin, H. M.—*Iron-Ore Deposits Near Nome and Placer Mining in Seward Peninsula, Alaska.* [For the most part separate brief descriptions of various properties].—U. S. G. S. Bull. 622-I; pp 13.

Eakin, H. M.—*Mining in the Fairbanks and Hot Springs District, Alaska.* [A synopsis of the current operations in those fields].—U. S. G. S. Bull. 622-G; pp 17.

Eddy, L. H.—*Bagley Scraper for Gravel Mining in Alaska.*—E. & M. J. Aug. 14 1915; p 257; pp 1½*; 25c.

Ellis, Hubert I.—*Thawing Methods at Fairbanks, Alaska.* [Not only the method of excavating is described, but the method of thawing and different types of jets for steam are taken up in detail].—E. & M. J. July 3 1915; p 1; pp 5½*; 25c.

Hall, H. H.—*The Water Supply for the Klondike Hydraulic Mines, Alaska.* [Gives costs and details of construction in making the ditch which conveys the water for the enterprise].—Western Eng. Aug. 1915; p 69; pp 3*; 35c.

Hlebnikoff, K. I.—*Dredging on the Amur.* [A placer deposit in Manchuria].—M. & S. P. Aug. 21 1915; p 283; pp 1*; 20c.

Jones, E. L., Jr.—*Gold Deposits Near Quartzite, Ariz.* [Briefly on the placer deposits and prospects, telling something of the geology, history and method of working].—U. S. G. S. Bull. 620-C; pp 13*.

Kneeland, F. H.—*Large Stripping Operation.* [Unlike most operations this work is being done on a salvage basis. Eight cu. yds. of earth may be removed to obtain 1 cu. yd. of coal].—Coal Age Sept. 25 1915; p 497; pp 5*; 20c.

Matson, G. C.—*The Phosphate Deposits of Florida.* [A review of the geology of the deposits with some description of the method of mining and refining the crude product].—U. S. G. S. Bull. 604; pp 101*.

Nevius, J. N.—*The Larsson Gold Dredge.* [A dredge which has attempted towards working the gold from arid placer districts].—Mg. & Oil Bull. Sept. 1915; p 242; pp 3¼*; 25c.

Sauerman, H. B.—*Excavators to Economize Handling Material.* [Takes up a line of dragline excavators].—Rock Prod. & Bldg. Material Sept. 22 1915; p 42; pp 2*; 20c.

Sinclair, J.—*Tailings Reclaimed by Cableway at Goldfield, Nev.* [The tailings dump is about 75 acres in extent].—Mg. World Oct. 23 1915; p 643; pp 2*; 10c.

Tupper, C. A.—*Handling Heavy Materials with Cableways.* [The work is accomplished by derricks and grab buckets].—Mg. World Sept. 18 1915; p 447; pp 2*; 10c.

——— *A Shale Planer that Was Home Made.* [A description of the planer which is now being used in Iowa shale pits].—B. & C. Record Sept. 21 1915; p 432; pp 2*; 30c.

——— *Annual Report of the Smithsonian Institute for* 1914. [A number of different articles are given on both mining and other sciences. Geological subjects and one on the Yukon gold district are the principal ones on mining].—U. S. Govt. Printing Office; pp 729*.

——— *Coal Stripping in Illinois.* [Development of the revolving steam shovel and methods of handling the overburden].—Coll'y. Eng. Sept. 1915; p 69; pp 3⅓*; 30c.

——— *Gasoline Shovels Auxiliary to Steam Equipment.* [A gasoline engine used in conjunction with a steam engine in steam shovel work].—E. & M. J. Nov. 13 1915; p 806; pp 1*; 25c.

——— *Gravel Pit Operation with a Dragline Excavator.* [This excavator delivers to the hopper bin].—Excavate Eng. Dec. 1915; p 89; pp 1½*; 20c.

——— *Self-Propelled Low-Clearance Shoveling Machine.* [Describes the machine, giving drawing details and illustrations of it in use].—Engg. July 9 1915; p 35; pp 2½*; 35c.

——— *The Carney-Cherokee Coal Co.'s Coal Stripping Plant Near Mulberry, Kansas.* [A recent installation with one of the largest type of shovels yet constructed].—Excavating Eng. Oct. 1915; p 11; pp 4*; 20c.

——— *The Plant of the Atwood-Davis Sand Co., Beloit, Wis.* [Excavating in the pit is here taken up in detail].—Excavating Eng. Aug. 1915; p 409; pp 4*; 20c.

HYDRAULIC MINING

Berlich, Henry.—*Mining in Trengganu.* [A district in Malay, where tin and wolfram are found and occur in gravel and veins].—Mg. Mag. Nov. 1915; p 263; pp 3½*; 50c.

Boero, J.—*The Manufacture of Hydraulic Lime in America.* [Commences with the quality of the stone and fuel, then takes up the kiln, hydration and screening of the final product. Analytical results of hydraulic lime are also given].—National Lime Mfg. Assn. Bull. 16; pp 13.

Carver, D. F.—*Gold Recovery at Placer Mines.* [Confined to the recovery by means of riffles and concentrating tables].—E. & M. J. Sept. 18 1915; p 472; pp 1¼*; 25c.

Chodzko, A. E.—*The Hydraulic Compression of Air.* [Is the common method of falling water to create a vacuum].—M. & S. P. Aug. 14 1915; p 233; pp 4¾*; 20c.

Ellis, H. I.—*Sluicing Methods at Fairbanks.* [Pole riffles are used and the method of cleaning up is described].—E. & M. J. Dec. 18 1915; p 993; pp 4*; 25c.

Gullachsen, B. C.—*Hydraulic Stowing in the Gold Mines of the Witwatersrand.* [A method for washing sand fill into old stopes].—S. Afr. Engg. July 1915; p 10; pp 3*; 35c; Mg. World Oct. 9 1915; p 569; pp 1*; 10c.

Haggen, E. A.—*Placer Mining in the Okanagan Valley, B. C.* [A review of hydraulic operations there].—Mg. Engg. & Elect. Record July 1915; p 114; pp 1*; 35c.

Hall, H. H.—*The Water Supply for the Klondike Hydraulic Mines, Alaska.* [Gives costs and details of construction in making the ditch which conveys the water for the enterprise].—Western Eng. Aug. 1915; p 69; pp 3*; 35c.

Hall, H. H.—*The Water Supply for the Klondike Hydraulic Mines, Alaska.* [The cost of constructing flumes and pipe lines for carrying water to the scene of operations].—M. & S. P. Aug. 28 1915; p 321; pp 3*; 20c.

Jones, B. E.—*A Method of Correcting River Discharge for a Changing Stage.* [Confined to theory of the subject].—U. S. G. S. Water-Supply Paper 375-E; pp 14*.

Jones, E. L., Jr.—*Gold Deposits Near Quartzite, Arizona.* [Takes up the geology, history, etc., of the placer deposits and describes some of the prospects and mines].—U. S. G. S. Bull. 630-C; pp 13*.

Kuhl, Hans; Knothe, Walter.—*Die Chemie der Hydraulischen Bindemittel.* [A general review of the present knowledge of the chemistry of hydraulic cement. Written in German].—S. Hirzel, Leipzig; pp 347; $3.50.

Meinzer, O. E.—*Ground Water in Big Smoky Valley, Nevada.* [An account of available water to be had with costs for pumping and obtaining the same].—U. S. G. S. Water-Supply Paper 375-D; pp 32*.

Merrin, A. H.—*Annual Report on Dredge Mining and Hydraulic Sluicing in* 1914, *Australia.*—Govt. Printer, Melbourne, Australia; pp 16.

Palmer, L. A.—*A Novel Debris Dam.* [A dam built in California from placer mining debris. Considerable information is also given regarding the placer operations and costs in the state].—M. & S. P. July 10 1915; p 43; pp 4*; 20c.

Perry, R. W.—*Placers of Antioquia, Colombia.* [Nearly all the river gravels bear gold but most of the production comes from a few districts].—E. & M. J. Oct. 5 1915; p 585; pp 5*; 25c.

Pierce, C. H.—*Conditions Requiring the Use of Automatic Gages in Obtaining Records of Stream Flow.*—U. S. G. S. Water-Supply Paper 375-F; pp 9*.

Pierce, C. H.; Davenport, R. W.—*Relation of Stream Gaging to the Science of Hydraulics.* [Some tests and a general discussion of the subject].—U. S. G. S. Water-Supply Paper 375-C; pp 8*.

Saint-Smith, C. E.—*Annan River Tinfield District, North Queensland, Australia.* [A description of the hydraulic mining employed there, telling something of the geology. Abst. from a Govt. Geol. Surv. report].—Queen. Mg. Jnl. Sept. 15 1915; p 432; pp 16*; 35c.

Taylor, Roy.—*Color Used in Hydraulic*

Tests of Power Plants. [An accurate means for determining water flow by means of injecting coloring material].—Engg. News Sept. 23 1915; p 617; pp 4*; 25c.

Wood, B. D.—*Stream-Gaging Stations and Publications Relating to Water Resources.* [An index including publications and information obtained from 1885 to 1913].—U. S. G. S. Water Supply Paper 340-L; pp 56.

Wright, W. H.—*Hydraulicking at Waldo, Ore.* [Hydraulic elevators are needed in this field, as there is no slope to the country so as to take the tailings away].—E. & M. J. Aug. 7 1915; p 211; pp 4*; 25c.

——— *Annual Report of the Smithsonian Institute for* 1914. [A number of different articles are given on both mining and other sciences. Geological subjects and one on the Yukon gold district are the principal ones on mining].—U. S. Govt. Printing Office; pp 729*.

——— *The Round Mountain Hydraulic Installation, Nevada.* [A water system for operating giants in placer mining].—S. L. Mg. Rev. July 15 1915; p 11; pp 1½*; 25c.

MINING COSTS

Balliet, Letson.—*Inefficiencies of Poor Lighting.* [Compares the costs of carbide, candles and electricity, giving some of his experiences with the same].—S. L. Mg. Rev. July 30 1915; p 16; pp 2; 25c.

Bartley, Jonathan.—*Can Profits Be Made in Graphite?* [In which a general review of the graphite industry is taken up, and it is shown why it is so unprofitable. The author presents a remedy for this situation by having the mines manufacture their own raw product instead of selling it in the raw state].—Iron Age July 8 1915; p. 86; pp. 2¾; 30c.

Brackett, G. S.—*Comparative Costs of Operating.* [A comparison between electrical and hand methods].—Coll'y Eng. Oct. 1915; p 132; pp 2½*; 35c.

Brackett, G. S.—*Supervision of Mining Details.* [Points that should be thought of when considering various common problems which present themselves in daily operation].—Coal Age Sept. 18 1915; p 457; pp 1½; 20c.

Burr, F. L.—*The Steel Headframe at No. 9 Shaft, Republic Mine, Mich.* [The details of construction and cost for erecting a modern steel headframe].—E. & M. J. Sept. 11 1915; p 430; pp 5*; 25c.

Collins, E. A.—*Pumping at the Commonwealth Mine, Ariz.* [Gives details and costs].—M. & S. P. Nov. 20 1915; p 786; pp 3*; 20c.

Dorrance, C., Jr.—*Factors Which Increase Cost of Anthracite Mining.* [A paper read before the State Retailers' Assn.].—C. Tr. Bull. Dec. 15 1915; p 27; pp 2¾; 25c.

Finlay, J. R.—*Basic Principles of Mining Costs.* [A lecture delivered at the Columbia School of Mines].—School of Mines Qrt. April 1915; p 193; pp 6; 60c; E. & M. J. Nov. 27 1915; p 878; pp 2; 25c.

Gardner, E. D.—*Cost of Mine Openings.* [A review of the various costs included in surface examination, prospecting, stripping, etc., as read before the Soc. of Eng.].—E. & M. J. Nov. 13 1915; p 791; pp 3; 25c.

Geismer, H. S.—*Improving the Beehive Output.* [Compares the byproduct and beehive coke as regards quality and cost of production, giving preference to the former. A careful study is also made of the efficient operations of beehive ovens].—Coal Age July 3 1915; p 11; pp 1½; 20c.

Grady, W. H.—*Cost Factors in Coal Production.* [Efficient methods of operation and mining are taken up in detail with costs for various methods of mining].—I. & C. Tr. Rev. Aug. 20 1915; p 219; pp 4⅓*; 35c.

Haggen, E. A.—*Britannia Mine, Howe Sound, B. C.* [A most complete description of the mine and mill operations and construction. A 4-page supplement is given showing a detailed drawing of the mill. The geology, surroundings, etc., are also given].—Mg. Engg. & Elec. Rec. Aug. 1915; p 129; pp 20*; 35c.

Linke, H. A.—*Cost of Sinking 900-ft. Shaft, Nevada.* [An exploratory shaft 9x 5 ft., for which an itemized cost account is given].—E. & M. J. Nov. 20 1915; p 845; pp 2*; 25c.

Low, S. V. F.—*An Example of Low Working Costs.* [A brief regarding the operation under consideration is given and supplemented with information on the cost of the operation].—Aust. Inst. M. E. No. 18, 1915; p 59; pp 8*; 60c.

McFarland, J. R.—*Rapid Tunnel Driving Under the Bonus System.* [Gives costs and description of several tunnels run in the United States].—Engg. News Aug. 26 1915; p 405; pp 1½; 25c.

McIntosh, F. K.—*Shaft Sinking in a Michigan Iron Mine.* [Gives a method of procedure, with some costs, where a pentice is not used].—Mg. World Dec. 11 1915; p 933; pp 1¾*; 10c.

Middleton, A. E.—*Some Notes on the*

Comparative Costs of Compressed Air and Electricity for Use in Mine Stope Haulages. [A paper read before the South African Institute of Electrical Engineers].—S. Afr. Engg. Dec. 1915; p 108; pp 1; 35c.

Middleton, A. E.—*The Comparative Costs of Compressed Air and Electricity for Use in Mine Stope Haulage.* [A paper read before the S. Afr. Inst. E. E.].—S. Afr. Mg. Jnl. Oct. 30 1915; p 202; pp 1; 35c.

Notman, Arthur. — *Churn-Drilling Costs, Sacramento Hill, Bisbee, Arizona.* [Abst. from the proceedings of the A. I. M. E. The drilling cost $1.34; $1.56; $1.15, the latter two being made with electrically operated drill and the first cost with a steam drill].—Mg. World Oct. 23 1915; p 653; pp 3*; 10c.

Parmelee, H. C.—*Cyanidation of Low-Grade Sulphide Ores in Colorado.* [Flowsheets and general description and data are given regarding the district in general].—Met. & Chem. Engg. Aug. 1915; p 477; pp 3*; 30c.

Pope, D. E.—*Gold Mining in Chile.* [Various information is given regarding the laws, customs and prices in the country].—Mg. Mag. July 1915; p 33; pp 4*; 50c.

Rickard, T. A.—*Grass Valley Re-Visited.* [Takes up various points of interest regarding the methods of mining peculiar to the district, together with costs and production. A good explanation is given of a machine for testing the efficiency of air drills].—M. & S. P. July 3 1915; p 11; pp 3½*; 20c.

Sheldon, T. H.—*Roosevelt Drainage Tunnel, Cripple Creek, Colorado.* [The tunnel is completed, 5 miles long and is intended to drain several mines in the vicinity].—E. & M. J. Oct. 2 1915; p 545; pp 4*; 25c.

Sherman, G. F. G.—*Tramming and Hoisting of Copper Queen Mine, Arizona.* [Gives details regarding efficiency tests, methods of operation and costs in detail Electric haulage is used].—A. I. M. E. Bull. Sept. 1915; p 1836; pp 51*; 35c.

Storms, W. H.—*What Constitutes the Cheapest Mining.*—Mg. World Nov. 13 1915; p 766; pp 2½; 10c.

Woodworth, R. B.—*Steel Mine Timbering Costs.*—Coal Age Nov. 20 1915; p 835; pp 1¾*; 20c.

——— *Chontalpan Mine, Guerro, Mexico.* [Gives the geology of the deposits with mining and milling costs. The latter is followed by a description of their milling operations].—Mexican Mg. Jnl. Aug. 1915; p 277; pp 2; 35c.

——— *Coal Prospects of the Karoo, South Africa.* [Gives the geology and occurrence of the coal, which is found in fissures, a hunt being made for the seam. Possible working costs are given].—S. Afr. Mg. Jnl. Nov. 27 1916; p 292; pp 2; 35c.

——— *Cost of Mining and Milling at the Alaska Treadwell in* 1914. [Is a compilation of costs].—Mg. World July 24 1915; p 144; pp 1*; 10c.

——— *Development of Dredging in Yukon Territory, Alaska.* [Dredging started in 1899 and steam thawing is an important point].—E. & M. J. Dec. 25 1915; p 1039; pp 5¾*; 25c.

——— *Herbert Mine of the Connellsville Coke Co., Pa..* [Explains the operation of their underground haulage system, which employs gasoline locomotives].—Coal Age Sept. 11 1915; p 414; pp 3½*; 20c.

——— *Mechanical Doors and Brick Doors on Beehive Coke Ovens.* [Gives a comparison of the two types of doors, especially as regards their cost of operation].—Coll'y Eng. July 1915; p 644; pp 1½; 30c.

——— *Method and Cost of Grouting a Water-Bearing Fissure and Seamy Rock in Sinking a Mine Shaft.* [Condensed from a paper read before the L. S. M. I.].—Engg. & Cont. Nov. 3 1915; p 353; pp 2⅓*; 20c.

——— *Mining in Zacatecas, Mexico.* [A brief on the present situation, giving mining costs and conditions.]—Mexican Mg. Jnl. Sept. 1915; p 322; pp 1; 35c.

MINING MISCELLANY

Aikens, Warren.—*Electric Power for Montana Mines, Mills and Smelters.* [Gives details on the construction of and operation of the hydro-electric plants in the Butte district, Montana].—Mg. World July 17 1915; p 91; pp 6*; July 31 1915; p 171; pp 5*; 20c.

Balliet, Letson.—*Inefficiencies in the Mine Blacksmith Shop.* [Has to do with the handling of drill steel from the shop to the drill].—Mg. World July 24 1915; p 141; pp 1; 10c.

Bartley, Jonathan. — *Can Profits Be Made in Graphite?* [In which a general review of the graphite industry is taken up, and it is shown why it is so unprofitable. The author presents a remedy for this situation by having the mines manufacture their own raw product instead of selling it in the raw state].—Iron Age July 8 1915; p. 86; pp. 2¾; 30c.

Bowles, O.—*Safety in Stone Quarrying.* [Describes several methods and appliances for insuring safety].—U. S. Bur. of Mines Tech. Paper 111; pp 48*.

Brackett, G. S.—*Comparative Costs of Operating.* [A comparison between electrical and hand methods].—Coll'y Eng. Oct. 1915; p 132; pp 2½*; 35c.

Bradley, W. W.—*Mines and Mineral Resources of Colusa, Glenn, Lake, Marin, Napa, Solano, Sonoma and Yola Counties, California.* [Building materials, sulphur, magnesite and gravel are produced. Synopses on the deposits and equipment of companies with figures on the production of the minerals are given].—Cal. State Mg. Bur.; pp 208*.

Bretherton, S. E.—*Stop Unnecessary Waste of Metals in Mining.* [Showing that conservation of resources will soon have to be thought of with metals as with other limited products].—Mg. World Sept. 18 1915; p 437; pp 2; 10c.

Brown, G. C.—*Mines and Mineral Resources of Shasta, Siskiyou and Trinity Counties, California.* [Copper, gold, silver, brick, lime, chrome, pyrite, coal, mercury, etc., are produced].—Cal. State Mg. Bur.; pp 192*.

Brown, J. F. K.—*Mining with a Conveyor System.* [A novel scheme by which cost was lowered and safety increased by installing 300 ft. conveyors underground].—Coal Age Aug. 7 1915; p 204; pp 4; 20c.

Cain, Joseph.—*Sealing Off Mine Fires.* [A paper read before the Kentucky Mg. Inst. explaining several types of structures for this purpose].—Coal Age Dec. 25 1915; p 1048; pp 2¾*; 20c.

Clansman.—*Setting Out a Curve Underground by Means of a Theodolite.* [Mathematical discussion of the subject].—Sci. & Art of Mg. Aug. 28 1915; p 25; pp 2*; 35c.

Dickenson, E. H.; Volker, H. J.—*Notes on Shrinkage Stoping.* [Details of methods for mining large deposits of various characters].—E. & M. J. Nov. 27 1915; p 875; pp 2¼*; 25c.

Edwards, G. E.—*Mine Tool Steel Used Over Again.* [Tells of a method in use for remelting steel and using it over again].—Mg. World July 24 1915; p 143; pp 1.

Ellis, H. I.—*Stoping Methods at Fairbanks, Alaska.* [Efficient operation of the gravel deposits consists in thawing, and here shoveling is also of importance].—E. & M. J. Sept. 25 1915; p 503; pp 4*; 25c.

Ellis, Hubert I.—*Thawing Methods at Fairbanks, Alaska.* [Not only the method of excavating is described but the method of thawing and different types of jets for steam are taken up in detail].—E. & M. J. July 3 1915; p. 1; pp. 5½*; 25c.

Ellis, H. I.—*Winter Mining at Fairbanks.* [Principally surface operations].—E. & M. J. Oct. 30 1915; p 707; pp 4½*; 25c.

Fuetter, C. J.—*How to Splice Wire Rope.*—Coal Age Nov. 20 1915; p 834; pp 1*; 20c.

Fulton, C. H.—*The Buying and Selling of Ores and Metallurgical Products.* [Reviews the general practice and prices prevailing between the mine, mill and smelter].—Bur. of Mines Tech. Paper 83; pp 43.

Garrison, F. Lynwood.—*Mining Conditions in China.* [Is a brief review of the history of the Chinese people, the geography and topography of their country, the geology and coal deposits of the country and the many opportunities for engineers].—E. & M. J. July 3 1915; p 26; pp 2½; 25c.

Garrison, Lynwood F.—*Speculation in Mines.* [Discusses the speculative ideas of mining investment, wherein is told how other countries apply themselves to this problem].—M. & S. P. July 3 1915; p. 17; pp. 3; 20c.

Grady, W. H.—*Cost Factors in Coal Production.* [Efficient methods of operation and mining are taken up in detail with costs for various methods of mining].—I. & C. Tr. Rev. Aug. 20 1915; p 219; pp 4⅓*; 35c.

Greer, G. E.—*Projection of a Panel Mine.* [A paper read before the W. Va. Mg. Inst. The system gives a large tonnage from a small working area, prevents squeezes and allows a good ventilating system].—Coal Age Dec. 25 1915; p 1061; pp 2*; 20c.

Hall, R. D.—*Stresses in the Mine Roof.* [Analyzes stresses present in the roof of coal mines].—A. I. M. E. Bull. Sept. 1915; p 2013; pp 6*; 35c.

Harding, James E.—*Mining Ore from a Caved Stope.* [Is a method used in a stope which had taken on fire and left with no timbering or supports. The stope previously had been worked with square sets, but now was worked with fill, which kept the men up to the back similar to shrinkage stoping].—E. & M. J. July 10 1915; p 71; pp 1½*; 25c.

Hill, James M.—*Description of High Grade Mining District, California.* [Treats on the history of the district, giving a review of the geology of the formation and ore deposits which occur as veins in

rhyolite and andesite. Some of the mines are then taken up and a synopsis of their works given; U. S. G. S. Bull.].—S. L. Mg. Rev. June 30 1915; p 9; pp 3½*; 25c.

Holford, W. G.—*Mining Problems of the Eastern Rand.* [A paper read before the Inst. of Mg. & Met].—S. Afr. Mg. Jnl. Sept. 4 1915; p 7; pp 1; 35c.

Jones, S. A.—*The Cause, Prevention and Method of Dealing with Underground Fires.* [Spontaneous combustion from direct contact are taken up, with means for their remedy].—Canadian Mg. Inst. Aug. 1915; p 615; pp 11*; 35c.

King, Oliver.—*Mining Prospects of German East Africa.* [Treats on the geology, history, transportation, prospecting and other items of interest in this field, which is untouched and offers many difficulties to the prospector].—S. Afr. Mg. Jnl. Nov. 27 1915; p 289; pp 2; 35c.

Lakes, Harold.—*Glass Mine Models in Mine Work.* [Glass sections cut to correspond with the contours and the profile view of underground workings drawn on].—Oct. 30 1915; p 683; pp 2½*; 10c.

Lawrie, W. E.—*Spontaneous Combustion in Mines.* [Paper read before the Ipswich and District Mg. Inst. giving various causes for spontaneous combustion in coal seams].—Queen. Mg. Jnl. Sept. 15 1915; p 451; pp 3½; 35c.

Lincoln, F. C.—*The Potosi Tin Mining District, Bolivia.* [Reviews the people, geography and geology, mining, milling and smelting, with costs and description of the operations].—M. & S. P. July 24 1915; p 127; pp 3*; 20c.

Lowell, F. L.—*Mines and Mineral Resources of Del Norte, Humboldt and Mendocino Counties, California.* [Copper, gold, coal and petroleum are the principal minerals. A brief is given on the geology of each county and the properties are then described].—Cal. State Mg. Bur.; pp 59*.

Macleod, W. A.—*The Future of Mining in Western Australia.* [Is a review of the industry from a business standpoint].—Jnl. Chamber of Mines Aust. May 31 1915; p 95; pp 3; 80c.

McDonald, P. B.—*Efficiency Engineering in the Copper Country, Michigan.* [A discussion of the decline in the practice which a few years ago was so important]. M. & S. P. July 24 1915; p 120; pp 1½; 20c.

McKee, W. S.—*Manganese-Steel Castings in the Mining Industry.*—A. I. M. E. Bull. Dec. 1915; p 2399; pp 13*; 35c.

Means, C. M.—*The Rotary in Mine Work.* [Describes the economy had in using a rotary converter to change from alternate to direct current].—Coal Age Oct. 30 1915; p 707; pp 1½*; 20c.

Moir, James.—*Recent Investigations on Dust in Mine Air and the Causation of Miner's Phthisis.* [This disease is identical with miners' consumption].—Jnl. Chem. Met. & Mg. Soc. S. Afr. Aug. 1915; p 1; pp 8*; 35c.

Mrvik, F.—*Versuch zur Aufklärung der einen Unglückaufsfall Begleitenden Seltenen Grubenerscheinungen.* [Methods employed in repairing the destruction of a mine cave-in which affected workings and the shaft].—Montanist. Rund. Oct. 1 1915; p 649; pp 4½*; 35c.

Muirhead, A. B.—*The Development of Electricity in the Scottish Mining Industry.*—I. & C. Tr. Rev. Oct. 22 1915; p 511; pp 1⅓; 35c.

Murray, R. M.—*Mining Methods at Mount Lyell, Australia.* [Some geology is described. The method in general is the shrinkage stoping method].—Proc. Aus. Inst. of M. E. N. S. No. 9 1915; p 125; pp 16*; 70c.

Parmelee, H. C.—*Cyanidation of Low Grade Sulphide Ores in Colorado.* [Besides a general review of the industry as a business different processes are described which are part of the cyanidation process practiced there].—Met. & Chem. Eng. July 1915; p. 421; pp. 4½*; 30c.

Payne, J. H.—*Notes on the Chilean Nitrate Industry.* [Discusses the refining, mining and ore reserve question].—Amr. Fertilizer Dec. 25 1915; p 21; pp 2¼; 25c.

Rickard, T. A.—*The Valuation of Metal Mines.* [A paper read before the International Engg. Congress].—Canadian Mg. Jnl. Dec. 15 1915; p 748; pp 4½; 35c.

Roche, H. M.; Stoddard, J. C.—*Develop Nation's Oldest Iron Mine.* [Empire Steel & Iron Co.'s Mount Hope mines, describing the history, geology, surface and underground arrangements].—Iron Tr. Rev. July 22 1915; p 171; pp 6*; 25c.

Royce, Stephen.—*Use of Gunite in Underground Mine Work.* [From the proceedings of the L. S. M. I. The material is a cement mixture blown onto the part to be treated with compressed air through a hose].—Mg. World Sept. 25 1915; p 475; pp 2*; 10c.

Stone, S. R.—*Handling Mine Supplies by Cableway at Nome, Alaska.* [It is impossible to build docks at this port and therefore ships are unloaded by aerial cableway while at anchor in the harbor.

This cableway has a 1400 ft. span with about 100 ft. towers].—Mg. World July 10 1915; p. 47; pp. 2*; 10c.

Tucker, W. B.—*Mines and Mineral Resources of Amador, Calaveras and Tuolumne Counties, California.* [A general review covering gold, silver, copper, clay, lime, paint, etc., with their production].—Cal. State Mg. Bur.; pp 180*.

Weston, E. M.—*Practical Mining on the Rand.* [A series of lectures given practical men on stoping, drilling, blasting, driving drifts, etc.].—Pub. by Author at Johannesburg; pp 55*.

Weston, E. M.—*Stoping Methods and Drilling Problems on the Witwatersrand.* [From Mining Magazine].—S. Afr. Mg. Jnl. Oct. 9 1915; p 136; pp 1; 35c.

Williams, G. F.—*Mining Methods at Kimberley.* [A historical sketch of the early methods is brought to view and followed by an outline of the present method for working the ground, including supports, tramming, etc.].—Mg. Mag. July 1915; p 19; pp 9*; 50c.

——— *Capital for the Mining Industry.* [A review on financing mines in Western Australia].—West. Aust. Chamber of Mines June 30 1915; p 115; pp 5; 75c.

——— *Fifth Annual Report of the Director of the Bureau of Mines to the Secretary of Interior.*—U. S. Bur. of Mines 5th Annual Report 1915; pp 106.

——— *Mining and Metallurgy at the Exposition.*—M. & S. P. Sept. 11 1915; p 405; pp 4*; 20c.

——— *Rebuilding an Unprofitable Mine.* [The mine had failed because of inefficient equipment, etc.].—Coal Age Aug. 14 1915; p 254; pp 1½; 20c.

——— *Report of the Royal Commission on the Mining Industry at Broken Hill, New South Wales.* [Information on the general mining operations and sociological conditions in this lead-silver-zinc district].—Govt. Sydney Aust.; pp 862*; $4.

——— *The Bonus System Applied to Tunnel Driving.* [Contains cost tables on various tunnels excavated].—E. & M. J. Sept. 1915; p 517; pp 1¼; 25c.

——— *The Split-Check Leasing System in Colorado.* [By this method the company pays for supplies and the lessee furnishes labor and the check from the mill or sampler is divided equally].—Mg. World Oct. 30 1915; p 687; pp 1*; 10c.

——— *Working Seams That Occur Close Together.* [A method of working where the coal is banded with 2 or 3-ft. seams of shale or other foreign material].—Coal Age Aug. 21 1915; p 290; pp 1½*; 20c.

CHAPTER XIV

TRANSPORT AND HAULAGE

Transport (Rail and Water)

Armstrong, W. H.—*The Pneumatic Tie Tamper.*—Comp. Air Nov. 1915; p 7796; pp 3*; 20c.

Bright, Graham.—*The Modern Electric Mine Locomotive.* [Discussion of various types with tables showing their duties].—A. I. E. E. Aug. 1915; p 1615; pp 6*; 35c; C. Tr. Bull. Oct. 15 1915; p 56; pp 2; 25c; Coll'y Eng. Oct. 1915; p 145; pp 2; 35c.

Brown, G. E.—*Visiting the Hunan Tinfields, China.* [Takes up the history of the country and its means of transportation].—Mg. Mag. Sept. 1915; p 141; pp 5*; 50c.

Capps, S. R.—*Mineral Resources of the Chisana-White River District, Alaska.* [Gives a general review of the district and its routes of travel and then briefs on the important properties of the district].—U. S. G. S. Bull. 622-F; pp 40*.

Garfias, V. R.—*The Oil Region of Northeastern Mexico.* [A description taking up the geology, production, transportation, etc.].—Economic Geol. May 1915; p 195; pp 30; 60c.

Grammer, F. L.—*Heating as a Phase of Ore Treatment.* [Discusses the heat treatment of ores and shows how cost can be cut in transporting them for some distance].—Canadian Mg. Jnl. Oct. 15 1915; p 629; pp 1¾; 35c.

Hanchett, F. B.—*Mining and Haulage in the Clifton-Morenci District, Ariz.* [Methods of mining and points of interest regarding haulage and transportation from the mines to the mills and smelters].—Mg. World Sept. 4 1915; p 367; pp 4*; 10c.

King, Oliver.—*Mining Prospects of German East Africa.* [Treats on the geology, history, transportation, prospecting and other items of interest in this field, which is untouched and offers many difficulties to the prospector].—S. Afr. Mg. Jnl. Nov. 27 1915; p 289; pp 2; 35c.

Lee, Willis T.; Stone, Ralph W.; Gale, Hoyt S.—*Guide Book of Western United States.* [Is a guide of the western railroads with a description of the location of their routes].—U. S. G. S. Bull. 612; pp. 243*.

McKinley, J. C.—*Question Is One of Differentials.* [On the question of railroad transportation rates].—C. Tr. Bull. Nov. 1 1915; p 35; pp 4½; 25c.

Spearman, Charles.—*The Kowkash District, Ontario.* [A prospecting, canoe trip into the gold camp, describing the same, together with the geological formation].—Canadian Mg. Jnl. Oct. 1 1915; p 585; pp 3½*; 35c.

Stark, C. J.—*The Romantic Story of Vanadium.* [Its occurrence in Mexico and South America and the refining, mining and transporting of the crude ore].—I. Tr. Rev. Oct. 21 1915; p 781; pp 4*; 25c.

Steelman, J.—*Coal Shipments Through the Panama Canal.* [A general review of the subject].—Coal Age Oct 23 1915; p 670; pp 3½*; 20c.

Toll, R. H.—*Travel and Mining in Honduras.* [Address before the Colorado Scientific Soc.].—Mexican Mg. Jnl. March 1915; p 95; pp 2½; 35c.

——— *A Flourishing Transvaal Soda Industry.* [The history, treatment and working of natural soda lake deposit, also bringing up the transportation problem].—S. Afr. Mg. Jnl. June 26 1915; p 401; pp 2; 35c.

——— *Canoe Routes and Geological Features of the Kowkash District, Ontario.* [The description is accompanied with maps].—Canadian Mg. Jnl. Sept. 15 1915; p 556; pp 5*; 35c.

——— *Coal Handling at Panama.* [On the coal docks at Balboa and Cristobal, located at the Pacific and Atlantic entrance to the canal].—Coal Age Aug. 7 1915; p 210; pp 5*; 20c.

——— *Mining Prospects and Railways of German East Africa.* [Extracts from engineers' reports on the gold fields].—S. Afr. Mg. Jnl. Nov. 20 1915; p 269; pp 2¼*; 35c.

——— *Ore Handling by the Magma Copper Co., Arizona.* [A 30-mile railroad connects the mines and mills with the main line. The mills and mines are also spoken of in regard to their general operation].—Mg. World Sept. 11 1915; p 505; pp 2*; 10c.

——— *Representacion Grafica de las Tarifas Ferroviarias.* [Tells of trans-

*(b) Includes Transport and Haulage, Storage, Accidents, Sanitation, Safety, Rescue and First Aid, Labor, Management, Sociological, Accounts, Bookkeeping.

portation rates, tariffs made by the state and railroads, giving a graphic representation of the same].—Inf. y Mem. Soc. Ing. Peru Aug. 1915; p 289; pp 8*; 75c.

——— *Richmond, the Great Petroleum Center, California.* [A general review of production, history, transportation and the industry in general].—Cal. Derrick Dec. 1915; p 3; pp 3½*; 30c.

——— *Swedish State Hydro-Electric Power Station at Porjus, Sweden.* [A government-owned plant built to electrify an iron-ore railway].—Engg. Oct. 15 1915; p 385; pp 3½*; 35c.

——— *The Panama Canal Coaling-Station at Balboa.* [A detailed description with a double page detailed drawing of the unloading structure with a half-page detail section and various views].—Engg. Aug. 13 1915; p 156; pp 5*; 35c.

——— *The Panama Canal-Cristobal Coaling Plant.* [Describes a loader for boats at the station].—Engg. Oct. 8 1915; p 357; pp 3*; 35c.

——— *Western Rate Advance on Coal.* [Deals with coal freight rates and transportation as recently adjusted by the U. S. Commerce Commission].—Coal Age Aug. 28 1915; p 334; pp 3½; 20c.

Transport (Motor)

Arnold, H. F. W.—*Cost of Motor versus Horse Haulage.* [An investigation of the costs of handling material with a motor truck as compared with using a 2-horse truck].—Engg. Mag. Oct. 1915; p 28; pp 5; 35c.

Brackett, C. S.—*Motor Haulage and Side Tracks—I.* [General instructions protesting against the hit and miss method of laying out haulage systems].—Coal Age Oct. 9 1915; p 580; pp 2½*; 20c.

Brackett, Geo. S.—*Motor Haulage and Side Tracks—II.* [Deals with the arrangement of tracks in coal mines at junctions for both animal and motor haulage].—Coal Age Oct. 16 1915; p 622; pp 4*; 20c.

Eddy, L. H.—*Motor Travel in Desert Country.* [An account of the operation by burros, stage and automobile].—E. & M. J. Nov. 20 1915; p 835; pp 2½*; 25c.

——— *Good Roads Year Book for* 1915. [A complete treatise on road laws and road construction].—Amer. Highway Assn., Washington, D. C.; pp 498*; $1.

Haulage and Conveying in Mines

Broughton, H. H.—*The Electric Crane Applied to the Handling of Coal and Ore.* [Details of electric cranes, etc., for handling mine stock piles].—Elect. July 23 1915; p 575; pp 4*; 35c.

Brown, J. F. K.—*Continuous Face Haulage.* [A rope haulage system which will handle about 600 tons per day].—Coal Age Dec. 25 1915; p 1063; pp 2*; 20c.

Brown, J.; McCale, C. H.—*Laying Out a Pit Bottom for an Indian Colliery.* [Tells of haulage systems and arrangements in shaft bottoms and throughout underground workings. A great deal of advantage is here taken of gravitational methods. There is also some consideration given here to the hoisting problem].—Trans. Mg. & Geol. Inst. of India March 1915; p. 20*; 60c.

Brunton, Fred K.—*The British Columbia Co.'s Smelter, Greenwood, B. C.* [The entire operations of the smelter are described, including costs, furnace charges, etc., in detail. The methods are naturally efficient, as the company worked with a profit one of the lowest grade ore bodies in America].—A. I. M. E. July 1915; p 1401; pp 17*; 35c.

Clansman.—*Haulage in Collieries.* [A method for working and operating haulage at curves and branches].—Sci. & Art. of Mg. Dec. 4 1915; p 202; pp 1½*; 35c.

Clay, W. A.—*Ore-Bedding and Reclaiming at Copper Smelters.* [Dwells on the use of conveyor systems for making smelter stock piles in southwest United States and Mexico].—Mg. World July 17 1915; p 99; pp 3½*; 10c.

Cliff, R. C.—*The Power Plant of the North Bulli Colliery, Coledale, N. S. W.* [The main unit is a 400-kw. alternating current motor].—Mg. & Engg. Rev. Oct. 5 1915; p 5; pp 4*; 35c.

Coleman, J. E.—*Coal Mining in West Virginia.* [Describes the sociological features in the camp and the haulage problem at the mines, besides sundry other operations].—Sibley Jnl. Engg. Oct. 1915; p 21; pp 6½*; 30c.

Dean, Samuel. — *Modern American Coal Mining Methods, with Some Comparison.* [A paper read before the North of England Inst. Mg. Engrs. on haulage and coal cutting].—Coll'y Guard. Oct. 15 1915; p 777; pp 2*· 35c; Sci. & Art of Mg. Oct. 23 1915; p 121; pp 3; 35c.

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*Includes the Production of Metals and Metal Ores, Non-Metals, etc.

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——— *American Potash.* [An account of production and sources of production].—Chem. Engg. Nov. 1915; p 181; pp 4¼; 35c.

——— *Annual Report of the Director of the Mint for* 1915. [Besides an assemblage of data from mint operations in U. S. during 1915, figures on the production of gold and silver in U. S. and foreign countries during 1914 are given].—U. S. Treasury Dept. Doc. 2757; pp 304.

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——— *Baku Russian Petroleum.* [In general on the production and conditions prevailing there on the coasts of the Caspian sea, Asia Minor].—Petro. World Nov. 1915; p 559; pp 2; 35c.

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duction of iron-ore and iron in Sweden, 1914].—Glückauf Nov. 27 1915; p 1158; pp 6; 50c.

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——— *Coal Mining in South Africa.* [Deals with a review of the industry and recent production].—S. Afr. Engg. Sept. 1915; p 84; pp 3*; 35c.

——— *Coal in Alabama, Wyoming, New Mexico, Michigan and Georgia During* 1914. [Has details of the amount of coal produced in the states mentioned and gives some discussion on the production of each].—Coal Tr. Bull. July 1 1915; p. 27; pp. 1; 25c.

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——— *Die Bergarbeiterlöhne in Deutschland im Jahre* 1914. [Statistics on coal, potash and iron mining industries in Germany in 1914].—Glückauf June 12 1915; p 590; pp 8; 50c.

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——— *Die Wirtschaftliche Entwicklung der Industrie der Elektrolytischen Kupferverfeinerung in den Vereinigten Staaten Nordamerika.* [The electrolytic refining of copper in United States, with figures on the production].—Metall & Erz July 8 1915; p 269; pp 6; 50c.

——— *Dredging in the Nome District, Alaska.* [Gives information on the current operations in 1914 and production data].—Mg. World Oct. 9 1915; p 570; pp 1; 10c.

——— *Estadistica Minera del Peru en* 1913. [Statistics on the mineral production of Peru, both metallic and non-metallic].—Cuergo Ing. Minas Bull. 81; p 9; pp 122; 75c.

——— *Facts Bearing Upon the Production and Marketing of Metals in Australia.* [Describes the ways by which and the places at which Australia's mineral wealth is disposed of].—Mg. & Engg. Rev. Sept. 6 1915; p 295; pp 2¼; 35c.

——— *Gemeinfassliche Darstellung des Eisenhüttenwesens.* [A review of the production of foundry iron-products and a description of their method of manufacture].—Verein Deutscher Eisenhüttenleute; pp 438; $1.65.

——— *Gold.* [A review of the history of gold mining and production with particular reference to the provinces of Canada].—Canadian Mg. Jnl. Sept. 1 1915; p 521; pp 3*; 35c.

——— *Gold Mining in Yukon.* [Treats on the production and general operation].—Canadian Mg. Jnl. Oct. 15 1915; p 634; pp 1; 35c.

——— *Granby Cons. Mining, Smelting and Power Co., B. C.* [In general on their costs, production and operation].—Mg. Engg. & Elect, Record July 1915; p 118; pp 2½*; 35c.

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——— *Industrial Resources of the Northwest.* [On the mineral resources and production of coal, oil, gold, silver, copper, etc., in Oregon, Washington, Idaho, B. C., etc.].—Canadian Mg. Jnl. Oct. 15 1915; p 632; pp 1¼; 35c.

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——— *Metalliferous Mining in British Columbia.* [A review of the mineral wealth and production of the province].—Mg. Engg. & Elect. Record July 1915; p 104; pp 2; 35c.

——— *Mining Conditions in Ontario for Six Months Ending June* 30 1915. [The production, etc., of gold, silver, nickel, copper and molybdenite].—Mg. World Oct. 9 1915; p 571; pp 1; 10c.

——— *Mining Prospects of the Murchison Range District.* [Gives an idea of the early production and operations in this South African field].—S. Afr. Mg. Jnl. Oct. 30 1915; p 198; pp 1½; 35c.

——— *Mining Statistics for the Union of South Africa for September,* 1915.—S. Afr. Engg. Nov. 1915; p 86; pp ⅔; 35c.

——— *Mining in India.* [An account of mineral productions and industry in India].—Mg. Jnl. Dec. 4 1915; p 825; pp 1¾; 35c.

——— *Mining in Southern Rhodesia, South Africa.* [Present conditions and affairs in the country].—S. Afr. Engg. Aug. 1915; p 26; pp 1½*; 35c.

——— *Mining on the Witwatersrand.* [A general review of the conditions, with cost and production figures].—E. & M. J. Aug. 21 1915; p 320; pp 2½*; 25c.

——— *Northern Nigeria Tin Industry.* [Abst. from British government inspector's report, giving details on the production of the province].—Mg. Jnl. Dec. 25 1915; p 885; pp 1½; 35c.

——— *Output of Coal and the Use of Electricity in Mines of England.* [A report of H. M. Inspector of Mines].—Elect. Rev. Oct. 22 1915; p 538; pp 2; 35c.

——— *Position and Prospects of the Australian Iron and Steel Industry.*—I. & C. Tr. Rev. Sept. 10 1915; p 305; pp 3; 35c.

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——— *Retiring Mine Inspector Reviews Coal Trade Conditions.* [The coal resources of Indiana and the production are here reviewed, giving a general idea of the history and conditions influencing the industry in that and other states].—Coal Tr. Bull. July 1 1915; p 51; pp 1½; 25c.

——— *Report of the Department of Mines, Western Australia, for the Year* 1914.—Aust. Dept. of Mines, Perth; pp 32.

——— *Review of the Tampico Oil Industry.* [History of the district, with figures on production].—Mg. & Oil Age Bull. July 1915; p 184; pp 7; 25c.

——— *Richmond, the Great Petroleum Center, California.* [A general review of production, history, transportation and the industry in general].—Cal. Derrick Dec. 1915; p 3; pp 3½*; 30c.

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——— *South Africa's Outlook.* [Deals with the production of their tin, copper, gold, gems, etc.].—Mg. Jnl. Sept. 18 1915; p 663; pp 2; 35c.

——— *Statistics of British Blast Furnaces for the Quarter Ended Sept.* 30, 1915.—I. & C. Tr. Rev. Oct. 22 1915; p 518; pp 1; 35c.

——— *Tasmania in* 1914. [The mineral production from the state consisting of gold, silver, tin, copper, coal, etc.].—Mg. Jnl. Oct. 30 1915; p 751; pp 1½; 35c.

——— *The Alaska Gold Mines.* [Editorial].—E. & M. J. Dec. 4 1915; p 937; pp 1; 25c.

——— *The Iron and Steel Trade in* 1915. [A review of the subject for England by districts, giving prices, production and wages with a discussion of the features which affected the trade].—I. & C. Tr. Rev. Dec. 31 1915; p 804; pp 6½; 35c.

——— *The July Gold Output in Detail, Rand, South Africa.* [Consists mostly of tables].—S. Afr. Mg. Jnl. Aug. 11, 1915; p 560; pp 2; 35c.

——— *The Manufacture of Coke in* 1914. [Abst. from Mineral Resources of the United States].—C. Tr. Bull. Nov. 1 1915; p 51; pp 3½; 25c.

——— *The Newcastle Steel Works, N. S. W.* [An account of their blast furnace operations and steel mills for rolling and refining the pig iron after it is made into steel there].—I. & C. Tr. Rev. Sept. 3 1915; p 275; pp 3*; 35c.

——— *The Oatman, Arizona, Mining District.* [An account of the mines, their production and geology].—Mg. World Nov. 13 1915; p 773; pp 3*; 10c.

——— *The Zinc-Lead Sulphides of Tasmania, Australia.* [An outline of locations with figures on production].—Mg. & Engg. Rev. Aug. 5 1915; p 260; pp 2*; 35c.

——— *Transvaal Chamber of Mines Annual Report,* 1914. [Giving laws, labor conditions, production, sanitation, etc., as found on the Transvaal, S. Afr.].—Johannesburg, S. Afr.; pp 500*.

——— *War's Effects on Lead and Zinc Production.* [Editorial]. — Mg. World Oct. 23 1915; p 658; pp ¾; 10c.

——— *War Upsets Manganese Ore Industry.* [Figures and discussion on the present production are compared with those of past years. Abst. from a U. S. G. S. Bull.].—I. Tr. Rev. Sept. 9 1915; p 485; pp 1½; 25c.

——— *What Some of the Leading Coppers Are Doing.* [Reviews the North Butte, Nevada Con., Utah and Chino Copper Cos.].—Mg. World Aug. 14 1915; p 259.

——— *Why Silver Is the Only Metal Not Experiencing High Prices.* [Editorial].—Mg. World Sept. 25 1915; p 488; pp ¾; 10c.

MILL AND MILLING.

CHAPTER XVI.

SAMPLING

Bauer, O.; Deiss, E.—*The Sampling and Chemical Analysis of Iron and Steel.* [Dwells on the necessity of taking accurate samples and being sure that the particles have not segregated].—McGraw-Hill Book Co.; pp 373*; $3.

Johnson, F. S.—*Problems in Successful Coking.* [A brief review of the coking industry in the United States, showing how the mining and preparation at the mine will often increase the quality of the product. Reference is also made to the byproduct ovens].—Coal Age July 3 1915; p 17; pp 1½; 20c.

Palmer, L. A.—*Gold Milling in California—A Comparison.* [Figures are given on the results of various mills, their system is described and then compared with the rest. Crushing, amalgamation, concentration and sampling are spoken of and commented on].—Met. & Chem. Engg. Sept. 15 1915; p 617; pp 6¾*; 30c.

Smith, E. A.—*The Sampling and Assay of Precious Metals.* [Comprising gold, silver, platinum and the platinum group metals in ores, bullion and products].—Sheffield, England; pp 460*; $4.50.

Taggart, Arthur F.—*Hardinge Mill Data.* [In a brief tabulated form the results of grinding are given for various plants. Details of conditions and material handled are given with the feed and discharge percentage. The results of these cards are assembled on one form at the end].—A. I. M. E. July 1915; p 1365; pp 12; 35c.

Williams, M. J.—*Crushers for Byproduct Ovens.* [A description of two of the largest machines built to crush coking coal to ¼ mesh size. The crushers weigh 15 tons and have an hourly capacity of 300 tons].—Coal Age July 3 1915; p 10; pp 1½*; 20c.

——— *Fifty-Three Standards Considered by American Society for Testing Materials.* [A synopsis of the proceedings of the society is given. Also abstracted reviews from the papers read and questions discussed].—Iron Tr. Rev. July 1 1915; p. 37; pp. 6; 25c.

CRUSHING, GRINDING, ETC.

Bosqui, F. L.—*Metallurgical Practice in the Witwatersrand District.* [A complete description of the crushing and refining of the ores. Paper read before the A. I. M. E.].—South Afr. Engg. June 1915; p 127; pp 7*; July 10 1915; p 451; pp 1; Aug. 14 1915; p 556; pp 1; $1.05.

Bradley, G. O.—*Coarse-Crushing Plant of 1000 Tons Capacity.* [A paper read before the International Engineering Congress. Large sectional and plan drawings of the mill are given].—M. & S. P. Oct. 16 1915; p 592; pp 6¾*; 20c.

Clark, A. J.—*Notes on Homestake Metallurgy, S. D.* [Reviews the process, giving cost and other data, from the crushing of the ore to the precipitating of the gold. From the A. I. M. E.].— M. & S. P. July 17 1915; p 87; pp 4½*; 20c. Can. Mg. Jnl. July 15 1915; p 429; pp 4*; 35c. Mg. World July 3 1915; p 7; pp 2*; 10c.

Del Mar, Algernon.—*The Position of the Tube-Mill.* [Is a discussion on the most advantageous place for a tube mill to be placed in the circuit of a cyanide mill].—M. & S. P. July 24 1915; p 130; pp 2*; 20c.

Dowling, W. R.—*The Use of Scoop Discharges in Tube Mills.* [The practice as found on the Rand, South Africa].—Chem. Met. & Mg. Soc. South Afr. March 1915; p 214; pp 6*; 85c.

Gates, A. O.—*Kick vs. Rittinger: An Experimental Investigation in Rock Crushing Performed at Purdue University.* [Many of the results have been plotted into curves. The main object of the experiments was to see whether the work expended was proportional to the reduction in the diameter or the volume].—A. I. M. E. Bull. Sept. 1915; p 2023; pp 33*; 35c.

George, H. C.—*The Wisconsin Zinc District.* [Roasting and magnetic separation are practiced but tables do not follow the jigs in concentration].—E. & M. J. Sept. 4 1915; p 385; pp 4*; 25c.

Gilbert, L. D.—*Southwestern Portland Cement Co., Texas.* [The plant and quarry whose operations are described are located at El Paso, Texas].—Mg. & Oil Bull. Oct. 1915; p 265; pp 6½*; 25c.

Goodwin, L. Hall. — *Shaft-Rockhouse Practice in the Copper Country, Michigan.* [Has a complete description of the four methods of handling the rock and ore in the copper country, also sectional

drawings showing the structure of the buildings].—E. & M. J. July 3 1915; p 7; pp 5½*; July 10 1915; p 53; pp 4*; 50c.

Howard, L. O.—*Mill of the Big Four Exploration Co., Utah.* [An account of their method of crushing and concentrating the ore which contains copper, lead, zinc, and silver].—M. & S. P. Sept. 25 1915; p 471; pp 4*; 20c.

Howard, L. O.—*The New Mill of the Daly West Mining Co., Park City, Utah.* [Details and figures on the construction and operation of the new and old mill. A comparison is made of the two mills, the new one using both tables and flotation for concentrating].—Met. & Chem. Engg. Sept. 15, 1915; p 597; pp 5¼*; 30c.

James, W. H. T.—*Losses in Tin Recovery.* [A paper read before the Royal Polytechnic in which the losses in crushing and concentration are brought out].—S. Afr. Mg. Jnl. Oct. 2 1915; p 101; pp 1¼; 35c.

McLaren, Alex.—*Installation of Three Lane Mills at the Gloster Plant, Montana.* [Is mostly on the crushing and equipment of the plant].—S. L. Mg. Rev. July 30 1915; p 9; pp 2*; 25c.

Palmer, L. A.—*Gold Milling in California—A Comparison.* [Figures are given on the results of various mills, their system is described and then compared with the rest. Crushing, amalgamation, concentration and sampling are spoken of and commented on].—Met. & Chem. Engg. Sept. 15 1915; p 617; pp 6¾*; 30c.

Parmelee, H. C.—*Cyanidation of Low-Grade Sulphide Ores in Colorado.* [Flowsheets and general description and data are given regarding the district in general].—Met. & Chem. Engg. Aug. 1915; p 477; pp 3*; 30c.

Pratt, T. E.—*LaLucha Cyanide Mill, Mexico.* [Details of its construction, operation and pre-grinding of the ore for treatment].—Mexican Mng. Jnl. May 1915; p 162; pp 2½*; 35c.

Richards, R. H.—*The Evolution of Ore-Dressing Methods.* [A paper read before the International Engg. Congress, bringing out the history of milling operations].—Canadian Mg. Jnl. Dec. 15 1915; p 755; pp 2¾; 35c.

Robertson, G. A.—*The Dumb-Bell Tube Mill.* [A new mill in which dumb-bell rollers instead of pebbles are used].—S. Afr. Mg. Jnl. Nov. 13 1915; p 244; pp 1¼; 35c.

Rodgers, M. K.—*Standardizing Rock-Crushing Tests.* [A paper to be read before the A. I. M. E. Besides rules for standardizing results of some tests are given].—Mg. World Sept. 4 1915; p 365; pp 1¼; 10c; M. & S. P. Nov. 6 1915; p 711; pp 1; 20c.

Rose, Thomas.—*The Metallurgy of Gold.* [Describes methods of operation rather than machinery used, although the latter is briefly described].—Charles Griffin & Co. London; pp 600*; $6.

Simmons, Jesse.—*Trojan Ore and Milling Practice, South Dakota.* [On sampling, crushing and cyaniding the gold-ore where the seepage from the tailings pile is run through another precipitating medium].—M. & S. P. Nov. 1915; p 707; pp 3¾*; 20c.

Stadler, H.—*The Mechanical Efficiency of Crushing.* [Discusses the laws of crushing and comment on recent articles regarding crushing].—M. & S. P. Nov. 6 1915; p 697; pp 1½; 20c.

Stevens, T. B.—*The Metallurgy of the Sons of Gwalia Mine Ore, Australia.* [Gold ore with pyrite is treated by cyanide and amalgamation].—Jnl. West. Aust. Chamber of Mines Sept. 30 1915; p 211; pp 12*; 50c.

Warford, N. L.—*Pulverized Coal for Copper Smelting.* [Describes the plant now in successful operation at the Anaconda plant].—Mg. World Nov. 6 1915; p 721; pp 3*; 10c.

Wauchope, A.—*Surface Equipment of the Sons of Gwalia Gold Mine, Describing Recent Additions.* [An article taking up the sliming, cyaniding, amalgamating, crushing, concentrating and agitating methods at the mill with various correlated information.].—West Aust. Chamber Mines June 30 1915; p 122; pp 6*; 75c.

White, H. A.—*The Theory of Tube Milling.* [Is a detailed article on the operation and tests made on tube mills. Results in tabulated form and description are given which are obtained from both experience and the laboratory].—Canadian Mg. Jnl. July 1 1915; p. 396; pp. 4; 35c.

——— *Broken Hill Mining Practice, Australia.* [From the Mining and Engineering Review; treats on the crushing, sliming and concentration of the lead and zinc sulphide ores].—E. & M. J. July 24 1915; p 151; pp 2; 25c.

——— *Flotation at the Consolidated Arizona Smelting Co., Humboldt, Ariz.* [A description of the operations with milling costs and tables showing flotation records and Hardinge mill records].—Met. & Chem. Engg. Dec. 1 1915; p 897; pp 4*; 35c.

——— *Flotation at the Inspiration Mine, Arizona.* [Takes up the crushing of the ore and its previous treatment before going through the flotation plant

which is thoroughly described and accompanied with a flow sheet].—M. & S. P. July 3 1915; p 7; pp 4*; 20c.

——— *Metallurgy at the International Engineering Congress.* [Brief abstracts are given of the various papers read bearing on the material or operation under this division].—Met. & Chem. Engg. Oct. 15 1915; p 721; pp 8½; 30c.

———*Mount Coolon Goldfield.* [Memo for the Under-secretary of Mines, reproposed erection of a state controlled stamp battery, Brisbane, Australia].—Queen. Mg. Jnl. Sept. 15 1915; p 447; pp 1; 35c.

——— *New Sampling Plant at Hamburg, Germany.* [Is used to sample the pyrites imported from the United States].—E. & M. J. July 24 1915; p 140; pp 1½*; 25c.

——— *The Concentrator of the Braden Copper Co., Chile.* [Includes the crushing and flotation plant with detailed figures on operation].—Ten. Topics Oct. 1915; p 1; pp 6*; 35c.

FLOTATION

Bains, T. M., Jr.—*The Electrical Theory of Flotation.* [Mostly a compilation of abstracts from previous books and articles].—M. & S. P. Nov. 27 1915; p 324; pp 2½; 20c.

Bains, T. M., Jr.—*The Electrical Theory of Flotation.* [Confined to the process with zinc and lead sulphides].—M. & S. P. Dec. 11 1915; p 885; pp 2; 20c.

Belchic, G.; Allen, G. L.—*Flotation of the Joplin-Galena Slimes.*—Met. & Chem. Engg. Nov. 15 1915; p 847; pp 1; 25c.

Butters, C.; Clennell, J. E.—*Cyanide Treatment of Flotation Concentrate.* [Explains in detail the method followed].—M. & S. P. Nov. 20 1915; p 778; pp 8; 20c.

Callow, J. M.—*Notes on Flotation.* [An account of the Callow pneumatic-oil flotation process].—A. I. M. E. Bull. Dec. 1 1915; p 2321; pp 20*; Mg. World Dec. 4 1915; p 887; pp 8*; 10c.

Coghill, W. H.—*Surface Tension.* [A discussion adding to the article "Flotation at Broken Hill," and gives curves showing the surface to be had with various salts in solution in varying amounts].—M. & S. P. Oct. 9 1915; p 543; pp 2*; 20c.

Du Rell, C. T.—*Liquid Jets.* [A study of phenomenon of importance in cyanidation and flotation].—Met. & Chem. Engg. Oct. 15 1915; p 714; pp 2¼; 30c.

Du Rell, Chas. T.—*Why Is Flotation?* [Reviews the method of flotation in a general way so far as floating the mineral is concerned].—M. & S. P. Sept. 18 1915; p 428; pp 4; 20c.

French, Herbert J.—*Flotation Tests on Cobalt Silver Ores.* [Gives the results of various tests made with different ores and oils].—Canadian Mg. Jnl. July 1 1915; p. 400; pp. 1½; 35c.

French, H. J.—*Testing Bisbee Ores for Flotation Process.*—Mg. World July 24 1915; p 145; pp ½; 10c.

Galbraith, C. S.—*Flotation in Australia.* [The mineral particles are coated with oil so as to float. Considerable history of the district is also taken up here].—M. & S. P. July 17 1915; p 83; pp 3½*; 20c.

Hebbard, James.—*Flotation at the Central Mine, Broken Hill, New South Wales.* [Details on the operation, construction and tests made at the mine].—M. & S. P. Sept. 4 1915; p 347; pp 6½*; 20c.

Howard, L. O.—*The New Mill of the Daly West Mining Co., Park City, Utah.* [Details and figures on the construction and operation of the new and old mill. A comparison is made of the two mills, the new one using both tables and flotation for concentrating].—Met. & Chem. Engg. Sept. 15 1915; p 597; pp 5¼*; 30c.

Mathewson, E. P.—*Flotation at Washoe Reduction Works, Anaconda.* [A concise description of the operations as carried on there].—M. & S. P. Aug. 28 1915; p 312; pp 2*; 20c.

McClave, J. M.—*Oil Flotation Process in a Nut Shell.*—Mg. Amer. Oct. 30 1915; p 8; pp 1; 20c.

Mueller, W. A.—*Use of Coal Tar in Flotation.* [Experimental results and practical operations are discussed].—E. & M. J. Oct. 9 1915; p 591; pp 3; 25c.

Norris, D. H.—*Flotation—A Paradox.* [A general historical review of the patents and machines used].—M. & S. P. Dec. 25 1915; p 955; pp 4; 20c.

Offerhaus, C.—*Gas-Fired Reverberatory Furnace at Sulitjelma, Norway.* [The Elmore vacuum oil-flotation process is here used on copper sulphide ores and the furnaces are gas fired].—E. & M. J. Dec. 25 1915; p 1033; pp 4½*; 25c.

Prosser, W. C.—*Concentrating Gold King Ores.* [Tables and flotation are used in concentrating this gold ore which occurs in Colorado].—E. & M. J. Oct. 16 1915; p 633; pp 1¼*; 25c.

Ralston, O. C.—*Why Do Minerals Float?* [A discussion of tests made on this topic].—M. & S. P. Oct. 23 1915; p 623; pp 5*; 20c.

Read, Thomas T.—*The Engels Mine*

and Mill. [Reviews the camp in general, giving a description of the formation, the mines, costs and mill where no other process than flotation is used].—M. & S. P. July 31 1915; p 167; pp 5*; 20c.

Revett, B. S.—*How My First Introduction to Flotation Bubbles Cost Me Hard Labor and More Bubbles.* [An incident in regard to flotation].—M. & S. P. Oct. 16 1915; p 590; pp 1½; 20c.

Rickard, T. A.—*Charles Butters and the New Metallurgy.* [An interview had by T. A. Rickard with C. Butters in which results of some of Mr. Butters' flotation tests are given].—M. & S. P. Aug. 21 1915; p 273; pp 6½*; 20c.

Rickard, T. A.—*What Is Flotation?* [Both theory and practice are brought out concerning the new flotation method of concentration].—M. & S. P. Sept. 11 1915; p 383; pp 3½*; Oct. 2 1915; p 515; pp 5*; 40c.

Salinger, H.—*Flotation Plant of the Utah Leasing Co.* [This is a new 500-ton plant].—S. L. Mg. Rev. Nov. 15 1915; p 9; pp 2*; 25c.

Shellshear, W.—*Methods of Handling Waste Products from Mills.* [Describes the methods used at the leading flotation plants of Australia].—Mg. & Engg. Rev. Sept. 6 1915; p 287; pp 5*; 35c; Abst. in M. & S. P. Dec. 11 1915; p 892; pp 4*; 20c.

Smith, H. H.—*Flotation of Silver-Lead Mineral at New South Wales Mine, Australia.*—E. & M. J. Dec. 11 1915; p 953; pp 4*; 25c.

Smith, Ralph W.—*Flotation Testing Machine.* [A miniature for complete flotation tests on any kind of ore].—E. & M. J. Sept 4 1915; p 395; pp 2*; 25c.

——— *About Flotation.* [An editorial on the flotation process in general].—M. & S. P. July 31 1915; p 155; pp 1½; 20c.

——— *Air-Froth Flotation.*. [A part of the evidence brought out in Mineral Separation vs. Miami case describing some principles of flotation].—M. & S. P. Oct. 16 1915; p 583; pp 7*; Nov. 6 1915; p 701; pp 5½*; 40c.

——— *Concentration of Copper Ore by Flotation.* [Editorial].—M. & S. P. Aug. 28 1915; p 304; pp 1; 20c.

——— *Effects of Soluble Components of Ore on Flotation.* [They cause a solution in which the particles float for the better or worse].—M. & S. P. Dec. 18 1915; p 931; pp 1¾; 20c.

——— *Flotation Mill at Timber Butte, Mont.* [Abst. from a Montana Society of Engineers' paper].—Mexican Mg. Jnl. Aug. 1915; p 279; pp 1; 35c.

——— *Flotation and Wet Concentration.* [A general discussion of the subject].—Mg. & Engg. Rev. Nov. 5 1915; p 31; pp 2½; 35c.

——— *Flotation at Globe-Miami, Arizona.*—E. & M. J. Dec. 18 1915; p 1001; pp 1½; 25c.

——— *Flotation at the Consolidated Arizona Smelting Co., Humboldt, Ariz.* [A description of the operations with milling costs and tables showing flotation records and Hardinge mill records].—Met. & Chem. Engg. Dec. 1 1915; p 897; pp 4*; 35c.

——— *Flotation at the Inspiration Mine, Arizona.* [Takes up the crushing of the ore and its previous treatment before going through the flotation plant, which is thoroughly described and accompanied with a flow sheet].—M. & S. P. July 3 1915; p 7; pp 4*; 20c.

——— *Flotation in a Mexican Mill.* [Details on the method of operation with extraction and cost figures and information on tests made].—M. & S. P. July 24 1915; p 122; pp 5*; 20c.

——— *Flotation Process.* [Is a synopsis taking various processes separately, such as the Sanders, Macquisten, Hyde, etc.].—Mexican Mg. Jnl. April 1915; p 130; pp 4; 35c.

——— *Froth and Flotation.* [A recognition of the importance of froth, by students in the Univ. of California].—M. & S. P. July 31 1915; p 160; pp 1¾; 20c.

——— *Grades and Kinds of Oil for Flotation Processes.* [A review of the results obtained from the use of various kinds of oils].—Mg. World Sept. 25 1915; p 481; pp 1½*; 10c.

——— *Historical Sketch of the Oil Flotation Process.* [Abst. from A. I. M. E. I. Proc. on the early discoveries].—Mg. World Dec. 4 1915; p 903; pp ¾; 10c.

——— *Recent Progress in Flotation.* [Besides general description it takes up the Callow and Preferential flotation processes].—Mg. & Engg. Rev. Sept. 6 1915; p 298; pp 2½*; 35c.

——— *Sull'Attuale Stato Dei Processi di Concentrazione dei Minerali per Galleggiamento.* [Describes the flotation process].—Rass. Mineraria Sept. 15 1915; p 41; pp 3½; 35c.

——— *The Concentrator of the Braden Copper Co., Chile.* [Includes the crushing and flotation plant with detailed figures on operation].—Ten. Topics Oct. 1915; p 1; pp 6*; 35c.

——— *The Flotation Concentration of Ores.* [Details gathered from many

sources].—S. Afr. Mg. Jnl. Nov. 13 1915; p 243; pp 1½; 35c.

CONCENTRATING: SORTING, SIZING, WASHING

Bissell, R. W.—*Smelting Methods at Magistral, Durango, Mexico.* [Describes the mine, smelter and furnace operations and gives cost sheet].—Columbia School of Mines Qtly. Nov. 1914; p 22; pp 8*; 65c.

Boise, C. W.—*Diamond Fields of German Southwest Africa—I.* [The topography, nature of the deposits and method of concentrating. From the Mining Magazine].—S. Afr. Mg. Jnl. July 17 1915; p 468; pp 1; 35c.

Bosqui, F. L.—*Metallurgical Practice in the Witwatersrand District.* [A complete description of the crushing and refining of the ores. Paper read before the A. I. M. E.].—South Afr. Engg. June 1915; p 127; pp 7*; Sept. 4 1915; p 14; pp 1; 70c.

Burchard, E. F.—*Iron Ore in Cass, Marion, Morris and Cherokee Counties, Texas.* [The ores are hematite and limonite and their economic value is considerable in the concentration of the ore].—U. S. G. S. Bull. 620-E; pp 41*.

Carver, D. F.—*Gold Recovery at Placer Mines.* [Confined to the recovery by means of riffles and concentrating tables].—E. & M. J. Sept. 18 1915; p 472; pp 1¼*; 25c.

Clark, Allan J.—*Notes on Homestake Metallurgy.* [Reviews the practice in detail from the crushing and classifying of the ore to the smelting of the zinc precipitate. Costs, together with detailed information regarding consumption and time with curves will also be found].—A. I. M. E. July 1915; p 1381; pp 20*; 35c.

Clennell, J. E.—*Concentration Formulae.* [A number of formulae for use in running concentration tests, but of little use in practice].—E. & M. J. Oct. 30 1915; p 724; pp 1; 25c.

Cole, David.—*The Butchart System of Curved Riffles for Wilfley Tables.* [A paper read before the A. I. M. E.].—Mexican Mg. Jnl. Aug. 1915; p 284; pp 4½; 35c.

Copeland, D.; Hollister, S. E.—*Tin-Ore Dressing at Llalagua, Bolivia—I.* [One of a series describing the industry, milling and deposits in detail].—E. & M. J. Sept. 18 1915; p 461; pp 4*; 25c.

Copeland, D.; Hollister, S. E.—*Tin-Ore Dressing at Llallagua, Bolivia—II.* [Magnetic separation and roasting follow the concentration on jigs and tables].—E. & M. J. Sept. 25 1915; p 513; pp 3*; 25c.

Drucker, A. E.—*Classification and Fine Grinding.* [Correspondence].—M. & S. P. Oct. 16 1915; p 581; pp 1*; 20c.

Fleck, Herman.—*Addresses on the Rare Metals—Tungsten.* [A paper read before the Colo. Sci. Soc. Analyses of ore, history, production, concentration are taken up].—Colo. School of Mines Qtly. Oct. 1915; p 32; pp 10; 35c.

George, H. C.—*The Wisconsin Zinc District.* [Roasting and magnetic separation are practiced, but tables do not follow the jigs in concentration].—E. & M. J. Sept 4 1915; p 385; pp 4*; 25c.

Herbert, E. M.—*Ore Dressing at Clausthal, Spain.* [It is shown that favorable results are obtained in concentration with the use of antiquated machinery such as Harz jigs, etc.].—E. & M. J. Sept. 11 1915; p 425; pp 4½*; 25c.

Howard, L. O.—*Mill of the Big Four Exploration Co., Utah.* [An account of their method of crushing and concentrating the ore which contains copper, lead, zinc, and silver].—M. & S. P. Sept. 25 1915; p 471; pp 4*; 20c.

James, W. H. T.—*Losses in Tin Recovery.* [A paper read before the Royal Polytechnic in which the losses in crushing and concentration are brought out].—S. Afr. Mg. Jnl. Oct. 2 1915; p 101; pp 1¼; 35c.

Lewis, J. H.—*Electrostatic Separation of Pyritic Zinc Ores, Wisconsin.* [The pyrite is oxidized in a roaster to a magnetic oxide].—M. & S. P. Dec. 18 1915; p 927; pp 2½*; 20c.

Matson, G. C.—*The Phosphate Deposits of Florida.* [A review of the geology of the deposits with some description of the method of mining and refining the crude product].—U. S. G. S. Bull. 604; pp 101*.

Obrien, T. S.—*Amador Consolidated Milling Plant, Amador City, Cal.* [Amalgamation is not used in the mortars, an attempt is made to eliminate stamps and an unusual zinc-precipitating method is used].—E. & M. J. Aug. 14 1915; p 255; pp 2¾*; 25c.

Palmer, L. A.—*Gold Milling in California—A Comparison.* [Figures are given on the results of various mills, their system is described and then compared with the rest. Crushing, amalgamation, concentration and sampling are spoken of and commented on].—Met. & Chem. Engg. Sept. 15 1915; p 617; pp 6¾*; 30c.

Parmelee, H. C.—*Cyanidation of Low Grade Sulphide Ores in Colorado—I.* [Besides a general review of the industry

as a business different processes are described which are part of the cyanidation process practiced there].—Met. & Chem. Eng. July 1915; p. 421; pp. 4½*; 30c.

Pettis, E. S.—*Ore Dressing on the Mother Lode, California.* [Methods and results obtained in California cyanide mills and plants are told of in general and in some instances more specifically].—M. & S. P. Sept. 18 1915; p 433; pp 3½*; 20c.

Richards, R. H.—*The Evolution of Ore-Dressing Methods.* [A paper read before the International Engg. Congress, bringing out the history of milling operations].—Canadian Mg. Jnl. Dec. 15 1915; p 755; pp 2¾; 35c.

Roush, G. A.—*The Mineral Industry, Its Statistics, Technology and Trade During* 1914. [The production and general current conditions of the market are discussed and in many instances information is given regarding methods of operation in the industry. There are special chapters, among which is one on flotation].—McGraw-Hill Vol. XXII; pp 998; $10.

Taylor, M. T.—*Separation of Wolfram from Tin.* [Concentration is difficult because of the proximity in the two specific gravities. Abst. from the Mg. Mag].—Queen. Gov. Mg. Jnl. Aug. 14 1915; p 392; pp 1; 35c.

Wauchope, A.—*Surface Equipment of the Sons of Gwalia Gold Mine, Describing Recent Additions.* [An article taking up the sliming, cyaniding, amalgamating, crushing, concentrating and agitating methods at the mill with various correlated ed information].—West Aust. Chamber of Mines June 30 1915; p 122; pp 6*; 75c.

Wright, C. W.—*Magnetic Separation in Sardinia.* [Zinc-ore is treated here containing siderite and pyrite].—E. & M. J. Dec. 4 1915; p 911; pp 2¼*; 25c.

Wright, C. W.—*The Gennamari Mill, Sardinia.* [The mill treated galena lead ore and was only recovering 60%].—E. & M. J. Nov. 13 1915; p 795; pp 1½*; 25c.

Wright, C. W.—*Wright Concentrating Table.* [A table used considerably by the writer in concentrating the calamine and lead-sulphide ores in Sardinia, Italy].—E. & M. J. Oct. 16 1915; p 641; pp 2*; 25c.

——— *Broken Hill Mining Practice, Australia.* [From the Mining and Engineering Review; treats on the crushing, sliming and concentration of the lead and zinc sulphide ores].—E. & M. J. July 24 1915; p 151; pp 2; 25c.

——— *New System of Concrete Lining Specially Adaptable to Collieries.* [An arched form made of segments].—I. & C. Tr. Rev. July 2 1915; p 7; pp 1⅓*; 35c.

——— *Notes on Concentration at Nevada Con. Copper Co.* [Describes the thickeners, grinding practice and gives details of an overflow launder].—Met. & Chem. Engg. Oct. 15 1915; p 716; pp 1½*; 30c.

——— *Production of Zinc Oxide from Low-Grade Carbonate Ore at Leadville, Colo.* [The plan is to make an oxide of zinc, separate it and then convert into spelter].—Met. & Chem. Engg. Sept. 15, 1915; p 631; pp 2½*; 30c.

——— *Yorkshire Main Colliery.* [The surface equipment, including sorting and power plant structures].—I. & C. Tr. Rev. July 2 1915; p 1; pp 2⅓*; 35c.

AMALGAMATION

Adam, H. R.—*The Treatment of Antimonial Gold Ores from the Murchison Range, South Africa.* [The ores are given a cyanide and amalgamation treatment].—S. Afr. Mg. Jnl. July 31 1915; p 508; pp 1; 35c.

Bosqui, F. L.—*Metallurgical Practice in the Witwatersrand District.* [A complete description of the crushing and refining of the ores. Paper read before the A. I. M. E.].—South Afr. Engg. June 1915; p 127; pp 7*; 35c.

Clark, Allan J.—*Notes on Homestake Metallurgy.* [Reviews the practice in detail, from the crushing and classifying of the ore to the smelting of the zinc precipitate. Costs, together with detailed information regarding consumption and time with curves will also be found].—A. I. M. E. Bull. July 1915; p 1381; pp 20*; 35c. M. & S. P. July 17 1915; p 87; pp 4½*; 20c. Mg. World July 3 1915; p 7; pp 2*; 10c.

Geliens, G. A.—*The Geliens Process of Treating Refractory Ores.* [A method in which hydro-metallurgy is first employed and later amalgamation. It is for use with copper, gold and silver ores].—Mg. World Sept. 25 1915; p 473; pp 2; 10c.

Palmer, L. A.—*Gold Milling in California—A Comparison.* [Figures are given on the results of various mills, their system is described and then compared with the rest. Crushing, amalgamation, concentration and sampling are spoken of and commented on].—Met. & Chem. Engg. Sept. 15 1915; p 617; pp 6¾*; 30c.

Stevens, T. B.—*The Metallurgy of the Sons of Gwalia Mine Ore, Australia.* [Gold ore with pyrite is treated by cyanide and amalgamation].—Jnl. West. Aust. Chamber of Mines Sept. 30 1915; p 211; pp 12*; 50c.

Thornhill, E. B.—*Recovery of Mercury*

from Amalgamation Tailing. [Abst. of a paper to be read before the A. I. M. E., covering the chemistry and operations of the method].—M. & S. P. Aug. 7 1915; p 211; pp 1¼; 20c.

Wauchope, A.—*Surface Equipment of the Sons of Gwalia Gold Mine, Describing Recent Additions.* [An article taking up the sliming, cyaniding. amalgamating, crushing, concentrating and agitating methods at the mill with various correlated information].—West Aust. Chamber of Mines June 30 1915; p 122; pp 6*; 75c.

——— *Flotation Process.* [Is a synopsis taking various processes separately, such as the Sanders, Macquisten, Hyde, etc.].—Mexican Mg. Jnl. April 1915; p 130; pp 4; 35c.

CYANIDING

Adam, H. R.—*The Treatment of Antimonial Gold Ores from the Murchison Range, South Africa.* [The ores are given a cyanide and amalgamation treatment].—S. Afr. Mg. Jnl. July 31 1915; p 508; pp 1; 35c.

Baker, J. A.—*Building the Tough-Oakes Mill.* [A 100-ton cyanide plant in Ontario in which a complete record of costs is had and mill construction].—E. & M. J. Nov. 27 1915; p 869; pp 5*; Dec. 4 1915; p 915; pp 4; 50c.

Bosqui, F. L.—*Metallurgical Practice in the Witwatersrand District, South Africa.* [Is a very brief synopsis of a paper read before the A. I. M. E. It dwells on the treatment of the slimes, precipitation and the final clean-up].—Mg. Jnl. June 1915; p 451; pp 1½; 35c; South Afr. Engg. June 1915; p 127; pp 7*; July 1915; p 5; pp 4*; 70c. S. Afr. Mg. Jnl. Aug. 14 1915; p 556; pp 1; Sept. 4 1915; p 14; pp 1; Oct. 2 1915; p 107; pp 1¼ Oct. 16 1916; p 160; pp 1¼; $1.75.

Butters, C.; Clennell, J. E.—*Cyanide Treatment of Flotation Concentrate.* [Explains in detail the method followed].—M. & S. P. Nov. 20 1915; p 778; pp 8; 20c.

Carpenter, J. A.—*Precipitation with Zinc-Thread.* [This method is not as good as zinc dust, but has its good features and will give good results under favorable conditions].—M. & S. P. Dec. 11 1915; p 888; pp 3½; 20c.

Carpenter, J. A.—*Slime Agitation and Solution Replacement Methods at the West End Mill, Tonopah, Nev.* [Trent system, continuous decantation and replacement are in practice here. Abst. from a paper read before the A. I. M. E.].—Met. & Chem. Engg. Oct. 1 1915; p 671; pp 5*; 30c.

Clark, Allan J.—*Notes on Homestake Metallurgy.* [Reviews the practice in detail from the crushing and classifying of the ore to the smelting of the zinc precipitate. Costs, together with detailed information regarding consumption and time with curves will also be found].—A. I. M. E. Bull. July 1915; p 1381; pp 20; 35c. Mg. World July 3 1915; p 7; pp 2*; July 10 1915; p 49; pp 5*; 20c. M. & S. P. July 17 1915; p 87; pp 4½; 20c; Canadian Mg. Jnl. July 15 1915; p 429; pp 4*; 35c.

Clennell, J. E.—*Recent Advances in the Chemistry of the Cyanogen Compounds.* [It deals with the processes involved in treating ores and those involved in the manufacture of the cyanide].—A. I. M. E. Bull. Oct. 1915; p 2115; pp 14; 35c.

Clevenger, G. H.—*Electrolytic Precipitation of Gold, Silver and Copper from Cyanide Solutions.* [A paper read before the American Electrochemical Soc.].—M. & S. P. Nov. 13 1915; p 742; pp 8*; 20c; Mex. Mg. Jnl. Dec. 1915; p 430; pp 3; 35c; Met. & Chem. Engg. Nov. 1 1915; p 803; pp 3¾*; Nov. 15 1915; p 852; pp 9*; 70c.

Crook, W. J.—*The Testing of Ores for the Cyanide Process.* [A means by which the best cyanide treatment for ores can be previously ascertained by analysis].—Chem. Eng. July 1915; p 31; pp 2½; 35c.

Del Mar, Algernon.—*The Position of the Tube-Mill.* [Is a discussion on the most advantageous place for a tube mill to be placed in the circuit of a cyanide mill].—M. & S. P. July 24 1915; p 130; pp 2*; 20c.

Drucker, A. E.—*Plant-Construction Costs in Korea.* [This cyanide plant was to retreat a tailings dump with zinc and lead sulphides in it].—M. & S. P. Dec. 11 1915; p 887; pp 1*; 20c.

Durant, H. T.—*Refining Cyanide Precipitates.* [It is stated that the acid treatment is not efficient and the methods here described remove all impurities].—E. & M. J. Sept. 25 1915; p 523; pp 1½; 25c.

Du Rell, C. T.—*Liquid Jets.* [A study of phenomenon of importance in cyanidation and flotation].—Met. & Chem. Engg. Oct. 15 1915; p 714; pp 2¼; 30c.

Galbraith, C. S.—*Flotation in Australia.* [The mineral particles are coated with oil so as to float. Considerable history of the district is also taken up here].—M. & S. P. July 17 1915; p 83; pp 3½*; 20c.

Hamilton, E. M.; Crawford, P. H.—

Aluminum Precipitation at the Mill of the Butters Divisadero Co. [Aluminum is used for winning the precious metal from the cyanide solution instead of zinc].—M. & S. P. Sept. 11 1915; p 387; pp 4¼*; 20c.

Herz, N.—*The Results of Zinc-Dust Precipitation Tests.*—Mg. World Nov. 13 1915; p 769; pp 2¾; 10c.

Herz, Nathaniel.—*Zinc-Dust Precipitation Tests.* [A paper read before the A. I. M. E.].—Mg. Sci. Aug. 1915; p 34; pp 4; 35c.

Keeney, R. M.—*The Cyanide Plant of the Baker Mines Co., Cornucopia, Oregon.* [Method of operation, haulage, amalgamation, operating costs, etc.].—Met. & Chem. Engg. Dec. 15 1915; p 947; pp 6*; 25c.

Lass, W. P.—*An Electric Furnace for Melting Cyanide Precipitates.* [A paper to be presented at the A. I. M. E. meeting. The practice is mostly that followed at the Alaska Treadwell Gold Mining Co.].—M. & S. P. Aug. 7 1915; p 209; pp 1½*; 20c.

Leslie, H. M.—*The Prevention of Hydrolysis in Cyanide Solutions.*—Jnl. Chem., Met. & Mg. Soc. of S. Afr. Sept. 1915; p 36; pp 12*; 85c.

Low, V. F. S.—*Cyanidation in Western Australia.* [Gives milling costs and details of construction and operation in use in the district].—M. & S. P. Nov. 27 1915; p 819; pp 5*; 20c.

McLaren, Alex.—*Installation of Three Lane Mills at the Gloster Plant, Montana.* [Is mostly on the crushing and equipment of the plant].—S. L. Mg. Rev. July 30 1915; p 9; pp 2*; 25c.

Megraw, H. A.—*Details of Cyanide Practice.* [A collection of articles which have appeared in the E. & M. J. and have been written from personal observations made by the author].—McGraw-Hill Book Co.; pp 215*; $2.

Obrien, T. S.—*Amador Consolidated Milling Plant, Amador City, Cal.* [Amalgamation is not used in the mortars, an attempt is made to eliminate stamps and an unusual zinc-precipitating method is used].—E. & M. J. Aug. 14 1915; p 255; pp 2¾*; 25c.

Parmelee, H. C.—*Cyanidation of Low Grade Sulphide Ores in Colorado—I.* [Besides a general review of the industry as a business different processes are described which are part of the cyanidation process practiced there].—Met. & Chem. Eng. July 1915; p. 421; pp. 4½*; 30c.

Parmelee, H. C.—*Cyanidation of Low-Grade Sulphide Ores in Colorado—II.* [Flow-sheets and general description and data are given regarding the district in general].—Met. & Chem. Engg. Aug. 1915; p 477; pp 3*; 30c.

Peters, Franz.—*Neuerungen in der Elektrometallurgie der Edelmetalle.* [On the electrical treatment in furnace, precipitation and refining of gold and silver].—Glückauf Nov. 13 1915; p 1110; Nov. 20; p 1135; pp 9½; $1.

Pettis, E. S.—*Ore Dressing on the Mother Lode, California.* [Methods and results obtained in California cyanide mills and plants are told of in general and in some instances more specifically].—M. & S. P. Sept. 18 1915; p 433; pp 3½*; 20c.

Pope, D. E.—*Gold Mining in Chile.* [Various information is given regarding the laws, custom and prices in the country].—Mg. Mag. July 1915; p 33; pp 4*; 50c.

Pratt, T. E.—*La Lucha Cyanide Mill, Mexico.* [Details of its construction, operation and pre-grinding of the ore for treatment].—Mexican Mg. Jnl. May 1915; p 162; pp 2½*; 35c.

Ralston, O. C.—*Precipitating Action of Carbon in Cyanide Solutions.* [Is a discussion on the reason for amorphous carbon precipitating gold in cyanide solutions].—M. & S. P. July 17, 1915; p 77; pp 2; 20c.

Rose, Thomas.—*The Metallurgy of Gold.* [Describes methods of operation rather than machinery used, although the latter is briefly described].—Charles Griffin & Co. London; pp 600*; $6.

Rose, T. K.—*The Metallurgy of Gold.* [Separate chapters take up subjects related to gold as: Methods of extraction, concentration, alloys, chemistry, placer deposits, crushing, geology, assaying, etc. Reasons for, rather than a bare explanation, is the policy].—J. B. Lippincott Co.; pp 601*; book; $6.50.

Sharwood, W. J.—*The Determination of Mercury in Cyanide Solutions and Precipitate.* [Based on the vaporization of mercury oxide and its later condensation].—M. & S. P. Oct. 30 1915; p 663; pp 2¼; 20c.

Simmons, Jesse.—*Trojan Ore and Milling Practice, South Dakota.* [On sampling, crushing and cyaniding the gold-ore where the seepage from the tailings pile is run through another precipitating medium].—M. & S. P. Nov. 6 1915; p 707; pp 3¾*; 20c.

Spaulding, C. F.—*Experimental Cyanide Plant of the Michigan College of*

Mines.—Mg. World Nov. 20 1915; p 809; pp 1¾*; 10c.

Stevens, T. B.—*The Metallurgy of the Sons of Gwalia Mine Ore, Australia.* [Gold ore with pyrite is treated by cyanide and amalgamation].—Jnl. West. Aust. Chamber of Mines Sept. 30 1915; p 211; pp 12*; 50c.

Viehoever, A.; Johns, C. O.—*The Determination of Small Quantities of Hydrocyanic Acid.* [From the Jnl. of the Am. Chem. Soc.].—Chem. Eng. Aug. 1915; p 60; pp 2½; 35c.

Von Bernewitz, M. W.—*Cyanide Practice 1910 to 1913.* [Reprint of articles which have appeared during that time in the M. & S. P.].—M. & S. P.; pp 732; $3.

Wauchope, A.—*Surface Equipment of the Sons of Gwalia Gold Mine, Describing Recent Additions.* [An article taking up the sliming, cyaniding, amalgamating, crushing, concentrating and agitating methods at the mill with various correlated information].—West. Aust. Chamber of Mines June 30 1915; p 122; pp 6*; 75c.

White, H. A.—*Cyanide Consumption on the Witwatersrand.*—Jnl. Chem., Met. & Mg. Soc. of S. Afr. Sept. 1915; p 24; pp 12; 85c.

Wood, G. W.—*The Rochester Mill, Nevada.* [Costs and a description of the method used for treating the pulp from the thickeners].—M. & S. P. Aug. 28 1915; p 317; pp 3*; 20c.

Worcester, S. A.—*Simple Cyanide-Plant Design.* [A small plant with many automatic features and treating highly oxidized ores].—E. & M. J. Oct. 16 1915; p 631; pp 2½*; 25c.

——— *Metallurgy at the International Engineering Congress.* [Brief abstracts are given of the various papers read bearing on the material or operation under this division].—Met. & Chem. Engg. Oct. 15 1915; p 721; pp 8½; 30c.

——— *Shamva Mines, Rhodesia, South Africa.* [A brief description of the mines' operation].—S. Afr. Engg. Aug. 1915; p 25; pp 1*; 35c.

——— *Sulpho-Cyanides in Cyaniding.* [Deals with the general chemistry of].—Jnl. Chem. Met. & Mg. May 1915; p 307; pp 2; 90c.

——— *Testing Working Cyanide Solutions.* [From the Jnl. of the Chem. Met. and M. Soc. of So. Africa].—M. & S. P. July 24 1915; p 136; pp 1; 20c.

BRIQUETTING

Donath, E.—*Verwendung von Briketts mit Kalkzusatz.* [Briquetting with limestone].—Montanist. Rund. Nov. 16 1915; p 741; pp 2; 35c.

Parker, E. W.—*Fuel Briquetting in 1914.* [Is a financial and production review of the industry in 1914].—Mineral Resources U. S. II:5; pp 4; Mg. World July 17 1915; p 103; pp 1½; 10c.

Wenzel, Ernst.—*Der Bergbau Frankreichs und Seiner Kolonien.* [The coal, coke and briquetting industry in France].—Montanist. Rundschau June 16 1915; p 469; pp 3; 35c.

CHLORINATION

Larson, C. L.—*The Holt-Dern Process.* [Consists of chlorinized roasting of copper ores, mostly in Utah and vicinity].—Mexican Mg. Jnl. May 1915; p 165; pp 3*; 35c.

Manz, H.—*Ueber die Röstung von Kupfernickelerzen.* [The roasting and chlorination of copper-nickel ores].—Chem. Ztg. Sept. 15 1915; p 693; pp 2; 35c.

Rose, Thomas Kirke.—*Refining Gold Bullion.* [Deals on a method of refining bullion by dissolving the gold as a chloride with nascent chlorine and redepositing the same from the electrolyte in the usual way].—S. Afr. Mg. Jnl. May 29 1915; p. 306; pp. 1; 35c.

MILLING COSTS

Baker, J. A.—*Building the Tough-Oakes Mill.* [A 100- ton cyanide plant in Ontario in which a complete record of costs is had and mill construction].—E. & M. J. Nov. 27 1915; p 869; pp 5*; Dec. 4 1915; p 915; pp 4*; 50c.

Bissell, R. W.—*Smelting Methods at Magistral, Durango, Mexico.* [Describes the mine, smelter and furnace operations and gives cost sheet].—Columbia School of Mines Qtly. Nov. 1914; p 22; pp 8*; 65c.

Bosqui, F. L.—*Metallurgical Practice in the Witwatersrand District, South Africa.* [It is a very brief synopsis of a paper read before the A. I. M. E. It dwells on the treatment of the slimes, precipitation and the final clean-up].—Mg. Jnl. June 1915; p. 451; pp. 1½; 35c.

Bradley, G. O.—*Coarse Crushing Plant of 1000 Tons Capacity.* [A paper read before the International Engineering Congress. Large sectional and plan drawings of the mill are given].—M. & S. P. Oct. 16 1915; p 592; pp 6¾*; 20c.

Callow, J. M.—*Notes on Flotation.* [An

account of the Callow pneumatic-oil flotation process].—A. I. M. E. Bull. Dec. 1 1915; p 2321; pp 20*; 35c.

Clark, Allan J.—*Notes on Homestake Metallurgy.* [Reviews the practice in detail from the crushing and classifying of the ore to the smelting of the zinc precipitate. Costs, together with detailed information regarding consumption and time with curves will also be found]—.A. I. M. E. July 1915; p 1381; pp 20*; 35c; M. & S. P. July 17 1915; p 87; pp 4½*; 20c; Canadian Mg. Jnl. July 15 1915; p 429; pp 4*; 35c.

Cole, David.—*Arizona Copper Co.'s Dorr Thickener.* [Is 130 ft. in diameter and the largest ever constructed].—E. & M. J. July 24 1915; p 131; pp 4*; 25c.

Curran, Harry T.—*Cost of Mill Construction.* [Mill construction with its various peculiarities is taken up and costs are given].—E. & M. J. Aug. 28 1915; p 345; pp 3*; 25c.

Doak, S. E.—*Iron-Ore Agglomeration in Rotary Kilns.* [Costs, kiln construction, output, prevention of rings, treatment of pyrite cinders and uses of the product are dealt with separately. From A. I. M. E.].—Iron Age Sept. 9 1915; p 574; pp 2; 30c.

Doak, S. E.—*Rotary Kilns for Desulphurization and Agglomeration.* [The use of the furnace for pyrite cinders is brought out as well as uses of its products, costs, etc.].—A. I. M. E. Bull. Sept 1915; p 2061; pp 6; 35c.

Drucker, A. E.—*Plant-Construction Costs in Korea.* [This cyanide plant was to retreat a tailings dump with zinc and lead sulphides in it].—M. & S. P. Dec. 11 1915; p 887; pp 1*; 20c.

George, H. O.—*The Wisconsin Zinc District.* [Roasting and magnetic separation are practiced but tables do not follow the jigs in concentration].—E. & M. J. Sept. 4 1915; p 385; pp 4*; 25c.

Haag, Edward.—*Economy in Mill Construction.* [Treats on preparation, financing and designing of mills].—S. L. Mg. Rev. Aug. 15 1915; p 14; pp 2; 25c.

Jones, C. C.—*The Pacific Coast Iron Situation; The Iron-Ores of California and Possibilities of Smelting.* [Treats on the geology and analysis of the ore, together with prevailing conditions].—A. I. M. E. Bull. Sept. 1915; p 1887; pp 12*; 35c.

Keeney, R. M.—*The Cyanide Plant of the Baker Mines Co., Cornucopia, Oregon.* [Method of operation, haulage, amalgamation, operating costs, etc.].—Met. & Chem. Engg. Dec. 15 1915; p 947; pp 6*; 25c.

Leslie, E. H.—*Notes on the Metallurgy of Zinc.* [A general review of the smelting and milling of zinc, giving costs].—M. & S. P. July 31 1915; p 162; pp 5*; 20c.

Low, S. V. S.—*An Example of Low Working Costs.* [A brief regarding the operation under consideration is given and supplemented with information on the cost of the operation].—Aust. Inst. M. E. No. 18, 1915; p 59; pp 8*; 60c.

Low, V. F. S.—*Cyanidation in Western Australia.* [Gives milling costs and details of construction and operation in use in the district].—M. & S. P. Nov. 27 1915; p 819; pp 5*; 20c.

Parsons, C. L.; Moore, R. B.; Lind, S. C.; Schaefer, O. C.—*Extraction and Recovery of Radium, Uranium and Vanadium from Carnotite.* [Both hydrometallurgical and thermic methods are used].—U. S. Bur. of Mines Bull. 104; pp 124*.

Snyder, F. T.—*Data on Costs of Electric Steel.* [A paper read at the San Francisco meeting of the American Electrochemical Soc.].—I. Tr. Rev. Dec. 2 1915; p 1091; pp 2*; 25c.

Wood, G. W.—*The Rochester Mill, Nevada.* [Costs and a description of the method used for treating the pulp from the thickeners].—M. & S. P. Aug. 28 1915; p 317; pp 3*; 20c.

——— *Chontalpan Mine, Guerro, Mexico.* [Gives the geology of the deposits with mining and milling costs. The latter is followed by a description of their milling operations].—Mexican Mg. Jnl. Aug. 1915; p 277; pp 2; 35c.

——— *Cost of Mining and Milling at the Alaska Treadwell in* 1914. [Is a compilation of costs].—Mg. World July 24 1915; p 144; pp 1*; 10c.

——— *Cost of Tonopah Plant of Belmont Mining Co., Nevada.* [Abst. from the A. I. M. E. Bull. The plant will handle 500 tons per day and had a total cost of about $465,000].—Mg. World Oct. 23 1915; p 650; pp 1; 10c.

——— *Flotation at the Consolidated Arizona Smelting Co., Humboldt, Ariz.* [A description of the operations with milling costs and tables showing flotation records and Hardinge mill records].—Met. & Chem. Engg. Dec. 1 1915; p 897; pp 4*; 35c.

——— *Flotation in a Mexican Mill.* [Details on the method of operation with extraction and cost figures and information on tests made].—M. & S. P. July 24 1915; p 122; pp 5*; 20c.

MILL MISCELLANY

Aikens, Warren.—*Electric Power for Montana Mines, Mills and Smelters.* [Gives details on the construction of and operation of the hydro-electric plants in the Butte district, Montana].—Mg. World July 17 1915; p 91; pp 6*; 10c.

Aikens, Warren.—*Electric Power for Montana Mines, Mills and Smelters.* [Power is centralized at one station and delivered to the various mines of the district and the hoists are run with air instead of steam].—Mg. World July 31 1915; p 171; pp 5*; 10c.

Carpenter, J. A.—*Slime Agitation and Solution Replacement Methods at the West End Mill, Tonopah, Nev.* [Trent system, continuous decantation and replacement are in practice here. Abst. from a paper read before the A. I. M. E.].—Met. & Chem. Engg. Oct. 1, 1915; p 671; pp 5*; 30c.

Cole, David.—*Arizona Copper Co.'s Dorr Thickener.* [Is 130 ft. in diameter and the largest ever constructed].—E. & M. J. July 24 1915; p 131; pp 4*; 25c.

Curran, Harry T.—*Cost of Mill Construction.* [Mill construction with its various peculiarities is taken up and costs are given].—E. & M. J. Aug. 28 1915; p 345; pp 3*; 25c.

Dowling, W. R.—*The Use of Scoop Discharges in Tube Mills.* [The practice as found on the Rand, South Africa].—Chem. Met. & Mg. Soc. South Afr. March 1915; p 214; pp 6*; 85c.

Eakin, H. M.—*Mining in the Juneau Region, Alaska.* [The milling and mining operations with a production table].—U. S. G. S. Bull. 622-C; pp 6.

Freitag, K.—*Nevada Packard Reduction Plant at Rochester, Nevada.* [A description of the plant, operations and equipment].—Mg. World Nov. 27 1915; p 847; pp 1¾; 10c.

Fulton, C. H.—*The Buying and Selling of Ores and Metallurgical Products.* [Reviews the general practice and prices prevailing between the mine, mill and smelter].—Bur. of Mines Tech. Paper 83; pp 43; M. & S. P. Sept. 11 1915; p 392; pp 5; 20c.

Haag, Edward.—*Economy in Mill Construction.* [Treats on preparation, financing and designing of mills].—S. L. Mg. Rev. Aug. 15 1915; p 14; pp 2; 25c.

Haggen, E. A.—*Britannia Mine, Howe Sound, B. C.* [A most complete description of the mine and mill operations and construction. A 4-page supplement is given, showing a detailed drawing of the mill. The geology, surroundings, etc., are also given].—Mg. Engg. & Elect. Rec. Aug. 1915; p 129; pp 20*; 35c.

Hamilton, E. M.; Crawford, P. H.—*Aluminum Precipitation at the Mill of the Butters Divisadero Co.* [Aluminum is used for winning the precious metal from the cyanide solution instead of zinc].—M. & S. P. Sept. 11 1915; p 387; pp 4¼*; 20c.

Johnson, B. L.—*Mining on Prince William Sound and the Gold and Copper Deposits of the Port Valdez District, Alaska.* [Takes up the geology and general conditions of the region with separate descriptions of several properties located there].—U. S. G. S. Bull. 622-E; pp 58*.

Lewis, R. S.—*Perseverance Mine and Alaska Gastineau Mill, Alaska.* [In general tells of the methods used for extracting the ore and the means of haulage to the mill, which is also briefly described].—M. & S. P. Sept. 11 1915; p 397; pp 3½*; 20c.

Lincoln, F. C.—*The Potosi Tin Mining District, Bolivia.* [Reviews the people, geography and geology, mining, milling and smelting, with costs and description of the operations].—M. & S. P. July 24 1915; p 127; pp 3*; 20c.

MacMichael, R. F.—*A New Direct-Reading Viscosimeter.* [The instrument works on the general principles of an ordinary viscosimeter].—Jnl. of Ind. & Chem. Engg. Nov. 1915; p 961; pp 2*; 60c.

McBride, Richard.—*Annual Report of the Minister of Mines for the Year Ending Dec. 31, 1914, B. C.* [Details on the mining, milling, etc., of gold, copper, zinc, lead, silver, etc., in the province].—Bur. of Mines, Victoria, B. C.; pp. 543*.

McCauley, W. J.—*Solution of Pulp Problems by Graphic Methods.* [Treats on the solving of pulp problems by straight line curves].—E. & M. J. July 17 1915; p 98; pp 3*; 25c.

Megraw, H. A.—*Metallurgy in the Coeur d'Alene, Idaho.* [Takes up in a broad way the progress and conditions encountered there].—E. & M. J. Nov. 20 1915; p 827; pp 4*; 25c.

Meinke, Fred, Jr.—*Tests for Screen Selection.* [A description of tests run, giving the results obtained].—E. & M. J. Nov. 6 1915; p 763; pp 1; 25c.

Mooney, J. D.; Darnell, D. L.—*Conveyor-Belt Calculating Chart for Engineers.* [Abst. from a paper read before the A. I. M. E.].—Mg. World Oct. 23 1915; p 651; pp 1*; 10c.

Obrien, T. S.—*Amador Consolidated*

Milling Plant, Amador City, Cal. [Amalgamation is not used in the mortars, an attempt is made to eliminate stamps and an unusual zinc-precipitating method is used].—E. & M. J. Aug. 14 1915; p 255; pp 2¾*; 25c.

Palmer, L. A.—*Gold Milling in California—A Comparison.* [Figures are given on the results of various mills, their system is described and then compared with the rest. Crushing, amalgamation, concentration and sampling are spoken of and commented on].—Met. & Chem. Engg. Sept. 15 1915; p 617; pp 6¾*; 30c.

Proctor, C. L.—*Electricity in Zinc Mining Industry.* [The advantageous use of electricity for mine and mill use is here dealt with].—Zinc & Lead Jnl. Sept. 1915; pp 2*; 20c.

Richards, R. H.—*The Evolution of Ore-Dressing Methods.* [A paper read before the International Engg. Congress, bringing out the history of milling operations].—Canadian Mg. Jnl. Dec. 15 1915; p 755; pp 2¾; 35c.

Shellshear, W.—*Methods of Handling Waste Products from Mills.* [Describes the methods used at the leading flotation plants of Australia].—Mg. & Engg. Rev. Sept. 6 1915; p 287; pp 5*; 35c.

Simmons, Jesse.—*Tramming Sand-Tailing.* [A record of the disposal of tailings from the Wasp No. 2 mill at Flatiron, S. D.].—M. & S. P. Sept. 25 1915; p 475; pp 1*; 20c.

Tupper, C. A.—*The Bisbee-Warren District—Copper Queen Mine.* [The property is described in general, giving a review of the transportation, haulage, hoisting and mining methods, with information on the test mill built there].—Mg. World Oct. 2 1915; p 515; pp 8*; 10c.

White, H. A.—*The Theory of Tube Milling.* [Is a detailed article on the operation and tests made on tube mills. Results in tabulated form and description are given which are obtained from both experience and the laboratory].—Canadian Mg. Jnl. July 1 1915; p. 396; pp. 4; 35c.

——— *Electrical Precipitation.* [Discussion on the subject].—A. I. E. E. Bull. Nov. 1915; p 2646; pp 7; 35c.

——— *Flotation Process.* [Is a synopsis taking various processes separately, such as the Sanders, Macquisten, Hyde, etc.].—Mexican Mg. Jnl. April 1915; p 130; pp 4; 35c.

——— *Mining on the Witwatersrand.* [A general review of the conditions, with cost and production figures].—E. & M. J. Aug. 21 1915; p 320; pp 2½*; 25c.

——— *Ore Handling by the Magma Copper Co., Arizona.* [A 30-mile railroad connects the mines and mills with the main line. The mills and mines are also spoken of in regard to their general operation].—Mg. World Sept. 11 1915; p 405; pp 2*; 10c.

———*The Treatment of Molybdenite Ores.*—Canadian Mg. Jnl. Nov. 15, 1915; p 681; pp ¾; 35c.

——— *Transactions of the American Institute of Chemical Engineers.* [A compilation of various papers read at their meetings].—Van Nostrand; pp 268*; $3.

CHEMISTRY AND ASSAYING.

CHAPTER XVII.

CHEMISTRY

Anderson, R. P.—*The Specific Absorption of Reagents for Gas Analysis.* [The first reagent whose absorbing power is taken up in detail is that of alkaline pyrogallol, which is an extensive reagent for oxygen. A detailed description is given of the method in which it is used for analysis and the apparatus is described. Curves, etc., are given regarding its reuse after one absorption. The compounding of the chemical is also discussed].—Jnl. Ind. & Eng. Chem. July 1915; p 587; pp 9*; 60c.

Baruch, Edgar.—*Resources and Possibilities of Chemical Industry in the South-West United States.* [Abst. from a paper read at the American Inst. of Chem. Eng. meeting].—Met. & Chem. Engg. Sept. 15 1915; p 604; pp 4½; 30c.

Bauer, O.; Deiss, E.—*The Sampling and Chemical Analysis of Iron and Steel.* [Dwells on the necessity of taking accurate samples and being sure that the particles have not segregated].—McGraw-Hill Book Co.; pp 373*; $3.

Beeson, J. J.—*The Disseminated Copper Ores of Bingham Canyon, Utah.* [A detailed account of the ore genesis and the rock formations of the district].—A. I. M. E. Bull. Nov. 1915; p 191; pp 46*; 35c.

Bertsch, A.; Getzner, A.—*Untersuchungen über die Salzsysteme ozeanischer Salzablagerungen.* [Is experimental work for the distillation of salt from sea waters].—Kali June 15 1915; p. 177; pp. 7*; July 1 1915; p 193; pp 7½*; July 15 1915; p 217; pp 5*; Aug. 1 1915; p 229; pp 8*; Aug. 15 1915; p 245; pp 5½*; Sept. 1 1915; p 261; pp 9½*; $2.10.

Bowen, N. L.—*The Crystallization of Haplobasaltic, Haplodioritic and Related Magmas.* [Treats on the partial crystallization of the mineral constituents at various temperatures].—Amr. Jnl. of Sci. Aug. 1915; p 151; pp 25*; 60c.

Bowman, F. C.; Scott, W. W.—*Titration of Nitrates with Ferrous Sulphate.* [The brown color made by the ferrous sulphate is detectable to within 0.03 cc. in indicating].—Jnl. Indst. & Engg. Chem. Sept. 1915; p 766; pp 3; 60c.

Brownlee-Fuller - Hancock - Whitsit. —*Chemistry of Common Things.* [A superficial, elementary volume on industrial and applied chemistry].—Allyn & Bacon, N. Y.; pp 616; $1.50.

Bruckmiller, F. W.—*The Determination of Sulphates in Water by Benzidine.* [Is a volumetric method by which the soluble sulphate is precipitated, taken up with hot water and titrated while hot with standard alkali, using phenolphthalein as an indicator].—Jnl. Ind. & Chem. Eng. July 1915; p 600; pp 1½; 60c.

Burgess, G. K.; Sale, P. D.—*A Study of the Quality of Platinum Ware.* [Tests for the purity and losses due to heating, etc., in chemical and electrical laboratory work are here explained].—U. S. Bur. of Stand. Sci. Paper 254; pp 28*.

Clennell, J. E.—*Recent Advances in the Chemistry of Cyanogen Compounds.* [It deals with the processes involved in treating ores and those involved in the manufacture of the cyanide].—A. I. M. E. Bull. Oct. 1915; p 2115; pp 14; 35c.

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White, C. H.—*Methods in Metallurgical Analysis.* [Quantitative methods for analysis in metallurgical work].—Van Nostrand Co.; pp 356*; $2.50.

Zevallos, G. D.—*Interpretacion de los Analisis de Cementos Portland.* [Describes methods for the analysis of Portland cement].—Inf. y Mem. Soc. Ing. Peru Aug. 1915; p 308; pp 5½; 75c.

Ziegel, Henry.—*Metallurgical Analysis.* [Methods of analysis for iron-ores, slag, limestone, etc., having every other page blank for inserted notes].—Chem. Pub. Co.; pp 66*; $1.

——— *An Air Analyzer for Determining the Fineness of Cement.* [Abst. from a U. S. Bur. of Stand. paper].—Engg. & Cont. Nov 3 1915; p 352; pp 1½*; 20c.

——— *Analyst and Client.* [Notes on chemical and physical tests, etc., of value to those of the metallurgical industry].—Ridsdale Co., London; $1.75.

——— *Die Chemie des Giessereimannes.* [Reviews chemistry of use to a foundry man].—Eisen Ztg. June 19 1915; pp 1½; 35c.

——— *Methods of Analysis of Carbon Free Metals.* [Methods for chromium, titanium, tungsten, manganese, etc.].—Goldschmidt Thermit Co., N. Y.; pp 20.

——— *Proceedings of the Twenty-second Annual Convention of the National Fertilizer Association, Hot Springs, Va.* [Gives entire details for the first two days, July 12 and July 13, 1915].—Am. Fertilizer July 24 1915; p 47; pp 76*; 20c.

——— *Proposed Tentative Methods for the Sampling and Analysis of Coal.* [A joint report from the American Chem. Soc. and the American Soc. of Testing Material].—Chem. Eng. Oct. 1915; p 157; pp 7*; 35c.

——— *The Determination of Iridium in Platinum-Iridium Alloys.* [Employs silver as a medium].—Jnl. Chem. Met. & Mg. May 1915; p 306; pp 1; 90c.

METALLURGY.

CHAPTER XVIII.

ELECTROMETALLURGY

Addicks, Lawrence.—*The Electrolysis of Copper Sulphate Liquors Using Carbon Anodes.* [Results of a number of tests made at Douglas, Ariz., attempting to recover copper from the leached sulphate solution by electrolysis].—Met. & Chem. Engg. Oct. 15 1915; p 748; pp 8*; 30c.

Aldrich, C. H.—*Treatment of Silver Furnace Fume by the Cottrell Process.* [A paper read to the American Electrochemical Soc. The process is one of electrical precipitation from the Doré furnace fumes].—Mg. World Dec. 11 1915; p 930; pp 2½; 10c.

Bailey, T. F.—*Heat Treating Steel Automatically.* [An electric furnace designed to eliminate the human factor; paper read before Am. Iron & Steel Inst.].—I. Tr. Rev. Oct. 28 1915; p 833; pp 1; 25c; Iron Age Oct. 28 1915; p 993; pp 1½; 30c.

Bains, T. M., Jr.—*The Electrical Theory of Flotation.* [Mostly a compilation of abstracts from previous books and articles].—M. & S. P. Nov. 27 1915; p 824; pp 2½; 20c.

Bains, T. M., Jr.—*The Electrical Theory of Flotation.* [Confined to the process with zinc and lead sulphides].—M. & S. P. Dec. 11 1915; p 883; pp 2; 20c.

Beckman, J. W.—*Electro-Chemical and Electro-Metallurgical Possibilities of the Pacific Coast.* [Discusses the subject from a point of view for installing a plant].—Western Engg. Oct. 1915; p 141; pp 4*; 35c.

Beckman, J. W.—*The Electro-Chemical Possibilities of the Pacific Coast.* [A paper read before the American Electro-Chemical Soc. telling of the raw materials to be had, the power available, and various costs].—Chem. Eng. Oct. 1915; p 136; pp 4½; 35c.

Betts, A. G.—*Electrolytic Antimony Refining.* [A paper read before the American Electrochemical Soc. giving tests made on the running of the process].—Met. & Chem. Engg. Nov. 15 1915; p 848; pp 3¾*; 25c.

Bonini, C. F.—*I Processi Termoelettrici della Siderurgia Moderna: Forni Elettrici.* [An Italian publication on the smelting of iron ore and the making of steel in electric furnaces].—Ulrico Hoepli, Milan; pp 607*; $12.50.

Clevenger, G. H.—*The Electrolytic Precipitation of Gold, Silver and Copper from Cyanide Solutions.* [A paper read before the American Electrochemical Society].—Met. & Chem. Engg. Nov. 1 1915; p 803; pp 3¾*; 20c; Mex. Mg. Jnl. Dec. 1915; p 30; pp 3; 35c.

Cornell, Sidney.—*The Open-Hearth Versus the Electric Furnace in the Manufacture of Commercial Steels.* [Deals with costs of construction and production of the finished product].—Met. & Chem. Engg. Sept. 15 1915; p 630; pp 1½; 30c.

Dalton, A. C.—*Electric Steel Direct from Ore Fines.* [Electric shaft furnace with natural draft converts ore into pig steel].—Iron Age Nov. 18 1915; p 1184; pp 1½; 30c.

Dorsey, A. L.; Keeney, R. M.—*Electric Production of Pig Iron or Steel.* [Factors influencing its success in this country and costs of operation].—Iron Age Aug. 12 1915; p 360; pp 2¾; 30c.

Frank, K. G.—*Evolution of the Electric Furnace.* [A paper read at the Iron & Steel Electrical Engineers' meeting]. I. Tr. Rev. Nov. 4 1915; p 901; pp 2; 25c.

Frank, K. G.—*Progress in the Iron and Steel Industry and the Electric Furnace.* [Traces the history of the electric furnace steel practice and showing how it is replacing the old furnace].—A. I. E. E. Bull. Oct. 1915; p 2547; pp 8; 35c.

Goodrich, R. R.—*Hydro-Electrolytic Treatment of Copper Ores.* [Abst. from the A. I. M. E. Bull.].—Canadian Eng. Dec. 23 1915; p 705; pp ¾; 35c.

Gosrow, R. C.—*The Electric Furnace in the Foundry.* [Brings out items of general interest in operating].—Met. & Chem. Engg. Dec. 1 1915; p 882; pp 1½; 35c.

Gray, J. H.—*The Electric Furnace in the Foundry.* [Construction and operation based on modern experience. The current, transformers, power factors and details of a tilting mechanism are brought out].—Iron Age Oct. 14 1915; p 878; pp 3½; 30c.

Lass, W. P.—*Electric Furnace at the Alaska Treadwell.* [Paper read before the A. I. M. E. on the operation of the furnace and the mixtures charged].—Mg.

World July 17 1915; p 97; pp 1½*; 10c; M. & S. P. Aug. 7 1915; p 209; pp 1½*; 20c.

Lay, Douglas.—*Gold Precipitation on Paper.* [An electrolytic method in which the paper can be burned and no impurities left in the refined bullion].—E. & M. J. Aug. 14 1915; p 276; pp 1½; 25c.

McKnight, W. M.—*Stassano Electric Furnace at Redondo.* [A paper presented at the National Electric Light Association on the operation and use of the furnace in refining steel].—Jnl. Elect. Power & Gas July 17 1915; p 37; pp 2*; 35c.

Morrison, W. L.—*Electric Furnace in the Foundry.* [Pointers on furnace operation and the advantages of electric steel].—Iron Tr. Rev. July 22 1915; p 177; pp 2; 25c.

Mutscheller, A.—*The Relative Migration Velocities of the Ions in Complex Electrolytes.* [Is the result and review of experiments in which the author has found that the addition of colloids to the electrolyte materially affects the deposition on the cathodes].—Met. & Chem. Eng. July 1915; p. 439; pp. 3½; 30c.

Peters, Franz.—*Neuerungen in der Elektrometallurgie des Zinks.* [A new thermic electro method for refining zinc].—Glückauf June 12 1915; p 584; pp 6*; June 16 1915; p 605; pp 10*; 50c.

Peters, Franz.—*Neurungen in der Elektrometallurgie des Kupfers.* [Sets forth points in the electro-metallurgy of copper].—Glückauf Sept. 4 1915; p 875; pp 3; 50c.

Peters, Franz.—*Neurungen in der Elektrometallurgie des Kupfers.* [Describes tests and operations in late electrolytic practice of refining copper].—Glückauf Aug. 14 1915; p 797; pp 7; Aug. 21 1915; p 827; pp 4; Aug. 28 1915; p 845; pp 7; $1.50.

Peters, Franz.—*Neuerungen in der Elektrometallurgie der Edelmetalle.* [On the electrical treatment in furnace, precipitation and refining of gold and silver].—Glückauf Nov. 13 1915; p 1110; Nov. 20; p 1135; pp 9½; $1.

Peters, Franz.—*Neuerungen in der Elektrometallurgie des Bleis.* [New practice in the electrolytic refining of lead].—Glückauf Dec. 4 1915; p 1191; pp 5*; 50c.

Peterson, Olaf. — *Materials Adapted for Lining Electric Furnaces.* [The principal bricks are magnesia, silica, chrome, etc.].—Mg. World Oct. 30 1915; p 695; pp 1*; 10c.

Rose, Thomas.—*The Metallurgy of Gold.* [Describes methods of operation rather than machinery used, although the latter is briefly described].—Charles Griffin & Co. London; pp 600*; $6.

Rose, Thomas Kirke.—*Refining Gold Bullion.* [Deals on a method of refining bullion by dissolving the gold as a chloride with nascent chlorine and redepositing the same from the electrolyte in the usual way].—S. Afr. Mg. Jnl. May 29 1915; p 306; pp 1; June 19 1915; p 384; pp 1; 70c.

Snyder, F. T.—*Data on Costs of Electric Steel.* [A paper read at the San Francisco meeting of the American Electrochemical Soc.].—I. Tr. Rev. Dec. 2 1915; p 1091; pp 2*; 25c. Iron Age Oct. 21 1915; p 926; pp 2*; 30c.

Stansfield, A.—*Electric Furnace Steel in Canada.* [A paper read before the Montreal Met. Assn.].—Canadian Mg. Inst. Bull. Nov. 1915; p 849; pp 7*; 35c.

Stobie, Victor.—*The Manufacture of Electric Steel in the Stobie Furnace.* [Abst. of a paper read before the Cleveland Inst. of Eng.].—Elect. Sept. 3 1915; p 807; pp 1¾; 35c.

Vickers, C.—*Transactions of the American Institute of Metals.* [A compilation of papers read at various meetings on the base metal industry].—Amer. Inst. of Metals; pp 394*; $5.

Welbourn, B.—*The Production and Properties of Electrolytic Copper.* [A paper read to the Inst. of E. E., England].—Elect. Rev. Nov. 19 1915; p 235; pp 2½; Nov. 26 1915; p 700; pp 1¾*; 70c. Coll'y Guard. Nov. 19; p 1028; pp 1⅛; 35c.

Wills, W. H.; Schuyler, A. H.—*Heat Losses from an Electric Furnace.* [A paper presented at the 1915 annual meeting of the American Electrochemical Soc. The losses are due to the escape of gases through tap-holes, charging-doors, electrode conditions, etc..]—Iron Age Nov. 4 1915; p 1052; pp 2; 30c.

——— *American Electrochemical Society; Niagara Falls Section.* [Some information is given on transformers for electric furnace work].—Met. & Chem. Engg. Nov. 1 1915; p 776; pp 1; 20c.

——— *Anaconda to Build Big Zinc Reduction Plant.* [A wet electrolytic process will be used].—Mg. World Dec. 25 1915; p 1013; pp 1¼; 10c.

——— *Die Elektrochemie im Gietzereibetriebe.* [Treats on electro-magnets used in the operations].—Eisen Ztg. Oct. 2 1915; p 553; pp 2; Oct. 2 1915; p 601; pp 2*; Oct. 9 1915; p 618; pp 1½*; $1.05.

——— *Die Wirtschaftliche Entwicklung der Industrie der Elektrolytischen*

Kupferverfeinerung in den Vereinigten Staaten Nordamerika. [The electrolytic refining of copper in United States, with figures on the production].—Metall & Erz July 8 1915; p 269; pp 6; 50c.

——— *Electric Furnace Steel in Canada.* [Contributed to by many readers].—Canadian Mg. Inst. Dec. 1915; p 938; pp 8*; 35c.

——— *Electric Furnace of New Type.* [The Wile furnace uses two top and one bottom electrode on a 3-phase current. Results obtained are given].—Iron Age Oct. 14 1915; p 866; pp 2*; 30c.

——— *Electric-Furnace Production of Ferro-Chrome.*—Mg. Jnl. Nov. 20 1915; p 809; pp 1; Nov. 27 1915; p 815; pp 1; 70c.

——— *Electrical Precipitation.* [Discussion on the subject].—A. I. E. E. Bull. Nov. 1915; p 2646; pp 7; 35c.

——— *Electro-Metallurgy of Aluminum in the West.* [Bauxite is the mineral from which the metal is extracted by electrolysis. Costs of material and operations are also given here].—Mg. World Aug. 7 1915; p 219; pp 2½; 10c.

——— *Los Nuevos Hornos Altos de las Fabricas Electro Metallurgicas.* [The installing of electrical apparatus in the blast and other common types of furnaces].—Revista Min. Sept. 16 1915; p 432; pp 3*; 35c.

——— *New Electric Steel Furnace.* [An arc furnace using a two-phase current].—Elect. Rev. Oct. 8 1915; p 451; pp 3*; 35c

——— *Recent Developments in the Use of Electricity in Metallurgy.* [Abst. from a paper read before the Engg. Club of Philadelphia, giving some uses of electricity in iron and aluminum refining, as well as its use in a general way].—Mexican Mg. Jnl. Sept. 1915; p 316; pp 5; 35c.

——— *Rennerfelt Electric Furnace.* [Besies describing this Swedish invention some information is given on its operation].—Met. & Chem. Engg. Oct. 1 1915; p 702; pp 1¾*; 30c.

THERMIC METALLURGY

General

Abbott, R. R.—*Heat Treatment of Modern Steels.* [A paper read before the American Soc. of Mech. Eng. on the metallographic features of the operation].—I. Tr. Rev. Nov. 18 1915; p 981; pp 6*; 25c.

Addicks, Lawrence. — *Roasting and Leaching Concentrator Slimes Tailings.* [From the A. I. M. E. on tests made by the author at Douglas, Ariz., accompanied with curves showing results. The roasting procedure is also taken up].—Met. & Chem. Engg. Sept. 1, 1915; p 4½*; 30c.

Baily, T. F.—*The Electric Furnace for Reheating, Heat Treating and Annealing.* [A paper read before the Eng. Soc. of West Pa.].—Met & Chem. Engg. Sept. 1 1915; p 558; pp 6; 30c.

Bissell, R. W.—*Smelting Methods at Magistral, Durango, Mexico.* [Describes the mine, smelter and furnace operations and gives cost sheet].—Columbia School of Mines Qtly. Nov. 1914; p 22; pp 8*; 65c; Mg. World July 3 1915; p 17; pp 2½; 10c.

Bonini, C. F.—*I Processi Termoelettrici della Siderurgia Moderna: Forni Elettrici.* [An Italian publication on the smelting of iron ore and the making of steel in electric furnaces].—Ulrico Hoepli, Milan; pp 607*; $12.50.

Borman, W.; Ruff, Otto.—*Die Naheutektische Temperatur der Eisen-Kohlenstofflegierungen.* [Gives the form in which the carbon exists in iron at various temperatures].—Ferrum June 1915; p 124; pp 3*; 75c.

Borchers, W.—*Bericht über W. Menzels Studien zur Frage der Verhüttung der sogen. melierten Erze, Kupfer, Blei und Zink führender sulfidischer Erze.* [A German treatise on W. Menzels study of roastin copper, lead and zinc sulphide ores].—Metal & Erz July 8 1915; p 266; pp 3; 50c.

Bretherton, S. E.—*High Grade Slags in the Smelting of Lead Ores.* [On the use of fluxes in lead refining].—Mg. World Aug. 14 1915; p 257; pp 2; 10c.

Brisker, Karl.—*Die Grundlagen der Verfahren zur Erzeugung des Schmiedbaren Eisens.* [The smelting of iron for forge iron, including the use of fluxes, quality of the iron-ores used, etc.].—Montanist Rundschau Aug. 16 1915; p 563; pp 5; 35c.

Browne, D. H.—*Current Literature on Copper Metallurgy.* [Reviews the progress and current phases of the subject, also giving figures on copper production from various places].—Bull. Canadian Mg. Inst. Sept. 1915; p 694; pp 7; 35c.

Brunton, Fred K.—*The British Columbia Co.'s Smelter, Greenwood, B. C.* [The entire operations of the smelter are described, including costs, furnace charges, etc., in detail. The methods are naturally efficient as the company worked with a profit one of the lowest grade orebodies in America].—A. I. M. E. July 1915; p

1401; pp 17*; 35c; Canadian Mg. Jnl. July 15 1915; p 440; pp 3½*; 35c.

Buress, G. K.; Foote, P. D.—*Characteristics of Radiation Pyrometers.*—U. S. Bur. of Stand. 12:1; p 91; pp 89*.

Burman, B. F.—*Efficiency of the Blast Furnace Operation.* [Tabulated data is given and considerable theory is propounded on the operation of the blast, the chemical part being left out].—Met. & Chem. Engg. Sept. 15 1915; p 524; pp 5; 30c.

Callow, J. M.—*Notes on Flotation.* [An account of the Callow pneumatic-oil flotation process].—A. I. M. E. Bull. Dec. 1 1915; p 2321; pp 20*; 35c.

Campbell, E. D.—*On the Function of Ferric Oxide in the Formation of Portland Cement Clinker.* [It assumes the general theory that alite is crystallized through the medium of celite].—Jnl. Industrial & Chem. Engg. Oct. 1915; p 835; pp 2¾*; 60c.

Clapp, C. H.—*Geology of the Victoria and Saanich Map-Areas, Vancouver Island, B. C.* [The deposits are limestone and used for making lime and cement, and for flux in the smelters of the district].—Canadian Geol. Surv. Memoir 36; pp 143*.

Clark, Allan J.—*Metallurgy of the Homestake Mining Co.* [Paper read before A. I. M. E.; treats entirely on the leaching treatment of the sand and the refining of the zinc precipitates. Sodium cyanide and lime are used in the sand treatment].—Mg. World July 10 1915; p 49; pp 5*; 10c.

Clay, W. A.—*Ore-Bedding and Reclaiming at Copper Smelters.* [Dwells on the use of conveyor systems for making smelter stock piles in southwest United States and Mexico].—Mg. World July 17 1915; p 99; pp 3½*; 10c.

Collins, H. F.—*Concentration of Gold in Bottoms in the Converter.* [Abst. from a paper read before the Inst. of M. and Met., London. Contains tables of results and description of tests].—M. & S. P. July 24 1915; p 132; pp 3; 20c.

Cone, E. F.—*Converter Foundry of Large Capacity.* [The Reading Steel Casting Co., Pa., making a feature of copper-bearing steel].—Iron Age Sept. 23 1915; p 669; pp 7*; 30c.

Copeland, D.; Hollister, S. E.—*Tin-Ore Dressing at Llallagua, Bolivia—I.* [One of a series describing the industry, milling and deposits in detail].—E. & M. J. Sept. 18, 1915; p 461; pp 4*; 25c.

Copeland, D.; Hollister, S. E.—*Tin-Ore Dressing at Llallagua, Bolivia—II.* [Magnectic separation and roasting follow the concentration on jigs and tables].—E. & M. J. Sept. 25 1915; p 513; pp 3*; 25c.

Dickinson, H. C.; Osborne, N. S.—*An Aneroid Calorimeter.*—U. S. Bur. of Stand. Bull. 12:1; p 23; pp 26*.

Diehl, A. N.—*Progress in Blast Furnace Practice.* [Is an added discussion on a previous paper on improvements of benefit to the blast furnace in the smelting of iron ore. Tables are given regarding tests, etc.].—Iron Tr. Rev. July 1 1915; p. 28; pp. 2½; 25c.

Easter, H. F.—*Handling Leady Copper Matte.* [Abst. from a paper read at the A. I. M. E. meeting, entitled "Lead Smelting at El Paso].—M. & S. P. Sept. 25 1915; p 484; pp 1½; 20c.

Ervin, F. J.—*Principles of Continuous Melting Applied.* [The argument of capital invested, etc., which favor continuous molding].—Iron Age Sept. 23 1915; p 686; pp 1½; 30c.

Estep, H. Cole.—*A Modern Plant for Rolling Iron.* [In general is a description of the works of the St. Louis Screw Co., where special provision is made for cleaning and tumbling scrap. Sectional drawings and illustrations are shown. Powdered coal is used as fuel].—Iron Tr. Rev. July 8 1915; p 83; pp 8*; 25c.

Fraulob, Ing.—*Der Erzbergbau und das Metallhüttenwesen in China, mit Besonderer Berücksichtigung der Zinngewinnung in der Provinz Yünnan.* [The mining and smelting of tin in the province of Yunnan, China].—Metall & Erz Nov. 22 1915; p 459; pp 5½; 35c.

Gillett, H. W.—*How Aluminum Chips Are Recovered by Melting.* [A paper read before the American Inst. of Metals].—Foundry Nov. 1915; p 462; pp 1½; 35c.

Hermanns, Hubert.—*Beitrag zur Neueren Entwicklung in Giesswagenbau.* [Describes two types of moving casting machines. One to be operated by hand, the other by electricity].—Giesserei Ztg. Aug. 15 1915; p 241; pp 3½*; 35c.

Hibbard, H. D.—*Washed Metal.* [An account of the process discovered by Krupp and Bell as it is used today].—A. I. M. E. Bull. Dec. 1915; p 2387; pp 12*; 35c.

Hoefinghoff, H.—*Fortschritte auf dem Gebiete der Eisengewinnung.* [On the construction of stoves for the hot-blast as practiced in use with the modern blast furnace].—Montanist Rundschau Sept. 1 1915; p 602; pp 4*; 35c.

Imoff, W. G.—*The History of a Bad Furnace Cast.* [Details on an off-cast high in sulphur caused by cold air in the

furnace].—Iron Tr. Rev. July 15 1915; p 131; pp 2; 25c.

Ingalls, W. R.—*Some Points in the Economics of Zinc Metallurgy.* [A paper read at the International Engg. Congress bringing out the practice in this and other countries with a comparison].—E. & M. J. Oct. 2 1915; p 551; pp 4; 25c. M. & S. P. Oct. 2 1915; p 509; pp 4; 20c.

Irmann, R.—*Ueber den Einflutz des Wolframs auf Nickel.* [Treats on metallographic, thermic, electrical tests on the influence of wolfram on nickel].—Metall & Erz Sept. 8 1915; p 358; pp 7*; 50c.

Janssen, W. A.—*Checker Design for Open-Hearths.*—Foundry Oct. 1915; p 413; pp 1½; 35c.

Jones, C. C.—*The Pacific Coast Iron Situation; The Iron-Ores of California and Possibilities of Smelting.* [Treats on the geology and analyses of the ore, together with prevailing conditions].—A. I. M. E. Bull. Sept. 1915; p 1887; pp 12*; 35c.

Johnson, J. E., Jr.—*Blast Furnace Plant Auxiliaries and General Arrangement.* [Has to do with the arrangement and discussion of drying the air for the blast by both refrigeration and heating]. Met. & Chem. Eng. July 1915; p 429; pp 9*; 30c.

Johnson, J. E., Jr.—*Blast-Furnace Auxiliaries and General Arrangement.* [Shows plans of the general arrangement of various plants with good locations for power plants].—Met. & Chem. Engg. Aug. 1915; p 495; pp 4½*; 30c.

Johnson, J. E., Jr.—*Chemical Principles of the Blast Furnace.* [Treats on the fuels used and impurities which go into the slag. A note is added on the handling of iron-titanium ores].—Met. & Chem. Engg. Sept. 15 1915; p 634; pp 4½; 30c.

Johnson, J. E., Jr.—*Thermal Principles of the Blast Furnace.* [A general discussion of the furnace and results of heating and drying the blast].—Met. & Chem. Engg. Oct. 15 1915; p 718; pp 3*; 30c.

Johnson, J. E., Jr.—*Thermal Principles of the Blast Furnace.* [Brings out theory and gives curves showing the amount of heat available from 1 lb. of coke at the hearth and later submitted to the charge].—Met. & Chem. Engg. Nov. 1 1915; p 787; pp 5*; 30c.

Johnson, J. E., Jr.—*Thermal Principles of the Blast Furnace.* [Takes up some laws of thermo-dynamics regarding the blast furnace and analyzes the effects of wet ores on the charcoal and coke practices].—Met. & Chem. Engg. Nov. 15 1915; p 833; pp 8; 30c.

Johnson, J. E., Jr.—*Thermal Principles of the Blast Furnace.* [Devoted to mathematical chemistry of blast-furnace work].—Met. & Chem. Engg. Dec. 1 1915; p 905; pp 6; 30c.

Johnson, J. E., Jr.—*Thermal Principles of the Blast Furnace.*—Met. & Chem. Engg. Dec. 15 1915; p 954; pp 7¾; 30c.

Juretzka, Franz.—*Die Verarbeitung* Quecksilberhaltiger Nebenmaterialen im *Zinkhüttenbetriebe.* [The zinc blende from Unterdevon contains mercury and the article tells of its extraction in smelting].—Metall & Erz Aug. 8 1915; p 307; pp 4*; 50c.

Juretzka, Franz.—*Uber Rohmaterialbeschaffung, Technik und Rentabilität bei der Metallurgischen Cadmiumgewinnung.* [The metallurgical treatment of cadmium for refining it from the crude ore].—Metall & Erz June 22 1915; p 235; pp 6*; 50c.

Kenney, E. F.—*Making Sound Steel Commercially.* [Discusses Impurities and methods used for removing them].—I. Tr. Rev. Aug. 19 1915; p 349; pp 7*; 25c.

Klotz, H.—*Die Einfusse des Verzogerten Schmelzens beim Kupolofenbetrieb.* [Drawing off from a cupola furnace].—Eisem Ztg. Sept. 25 1915; p 585; pp 2¼; 35c.

Kranz, W. G.—*The Electric Furnace in the Foundry.* [A paper to be read before the A. I. M. E.].—Met. & Chem. Engg. Sept. 1 1915; p 565; pp 1½*; 30c.

Lathe, Frank E.—*Metal Loss in Copper Slags.* [The most important literature is here dwelt on and curves are shown giving the copper loss under various conditions].—E. & M. J. Aug. 7 1915; p 215; pp 3; 25c.

Leeds, M. E.—*Neglected Phenomena in Steel Treatment.* [Paper read at the eighteenth meeting of the American Society for Testing Materials. Discusses a new way to tell when steel has been heated through its transformation point and gives the temperature relation of the furnace and the steels surface and interior].—Iron Age July 8 1915; p 80; pp 2*; 30c.

Leslie, E. H.—*Notes on the Metallurgy of Zinc.* [A general review of the smelting and milling of zinc, giving costs].—M. & S. P. July 31 1915; p 162; pp 5*; 20c.

Liang, H. T.—*The Wah Chang Mines, China.* [Deals mostly with the metalliferous content of the antimony ores in that section].—M. & S. P. July 10 1915; p 53; pp 1½*; 20c.

Lincoln, F. C.—*The Potosi Tin Mining*

District, Bolivia. [Reviews the people, geography and geology, mining, milling and smelting, with costs and description of the operations].—M. & S. P. July 24 1915; p 127; pp 3*; 20c.

Lindt, V.—*Ueber den Schädlichen Einflutz von Sulfid-und Sulfatschwefel auf die Reduktion Gerösteter Blenden.* [Has to do with the disadvantage of sulphur and sulphates in the smelting of zinc blende].—Metall & Erz Aug. 22 1915; p 335; pp 12½*; 50c.

Maccoun, A. E.—*The Trend of Blast Furnace Improvements.* [A paper read before the A. I. & S. I. covering blast furnace and hot stove tests and suggestions as to improvements that might be made]. —Iron Age Sept. 16 1915; p 624; pp 3*; 30c.

Manz, H.—*Ueber die Röstung von Kupfernickelerzen.* [The roasting and chlorination of copper-nickel ores].—Chem. Ztg. Sept. 15 1915; p 693; pp 2; 35c.

Marquand, A. B.—*Smelting with Crude Petroleum.* [Treats on the subject when compressed air is used].—Cal. Derrick July 1915; p 3; pp 4*; 30c; Canadian Mg. Jnl. Aug. 1 1915; p 472; pp 3.

Mathewson, E. P. — *Anaconda Coal-Pulverizing Plant.* [Contains a description with sectional and plan drawings on the new plant now being built at Anaconda. It supplies coal dust fuel for the reverberatory furnaces at the Washoe reduction works].—E. & M. J. July 10 1915; p 45; pp 3*; 25c.

Meuskens, C.—*Ueber Trocknungsanlagen für Kalisalze mit besonderer Berücksichtigung der Feuerunganlagen.* [The drying of potassium salts with special reference to the way in which the fire should be operated].—Kali Sept. 15 1915; p 281; pp 6½*; Oct. 15 1915; p 312; pp 3*; 70c.

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Rodenhauser, W. — *Ferromangan als Desoxydations mittel.* [A German work on the employing of ferro-manganese in making steel, etc.].—Leipzig, Oscar Leiner; pp 127; $2.35.

Schlippenbach, F. — *Vereinfachte Berechnung von Bleihochofenbeschickungen.* [Deals with methods for operating a deep lead furnace].—Metall & Erz Oct. 8 1915; p 399; pp 4; 50c.

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Stören, R.—*Beobachtungen beim Pyritschmelzen.* [Gives details regarding the chemistry and furnace practice in pyrite smelting].—Metall & Erz June 8 1915; p 220; pp 6½*; June 22 1915; p 241; pp 9½*; $1.

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Tupper, C. A.—*Copper Queen Reduction Works, Arizona.* [A thorough review of the equipment and operations is here given].—Mg. World Nov. 6 1915; p 725; pp 3½*; 10c.

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screens and conveyor belts used in handling the ore].—Mg. World July 3 1915; p 1; pp 6*; 10c.

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——— *Blast Furnace Tapping Machine.* [A successful machine now in operation at Youngstown, Ohio].—I. Tr. Rev. Aug. 12 1915; p 321; pp 2*; 25c.

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——— *Copy of a Contract for Tin Ores Between European Smelters and Bolivian Miners.*—M. & S. P. July 31 1915; p 175; pp 2; 20c.

——— *Curran's Patent Heating and Annealing Furnace.* [For annealing copper sheets].—I. & C. Tr. Rev. Sept. 10 1915; p 309; pp 1*; 35c.

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——— *Description of the Holt-Dern Chloridizing Process.* [A chloridizing roast of gold, copper and silver ores].—Mg. World Aug. 21 1915; p 294; pp 1; 10c.

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——— *Die Eisengiesserei-Praxis.* [On the reduction of iron ores in blast furnaces].—Eisen Ztg. June 19 1915; p 365; pp 2½*; June 26 1915; p 381; pp 2; July 3 1915; p 398; pp 2; July 10 1915; p 415; pp 1½; July 24 1915; p 446; pp 4*; Aug. 21 1915; p 507; pp 2¼*; $2.10.

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——— *Eine Neue Stichlochstopfvorrichtung für Kupolöfen.* [A new form of plug for use as a stop in the tap-hole of a cupola furnace].—Eisen Ztg. July 31 1915; p 461; pp 1¼*; 35c.

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——— *Possible Applications of Oxygen in Metallurgy.* [Contains curves and gives a review of the use of oxygen blast for smelting iron].—Met. & Chem. Engg. Aug. 1915; p 483; pp 1½; 30c.

——— *Power Plant of the Granby Mining & Smelting Co.* [Details of the electrical and steam power equipment at the zinc smelter].—E. & M. J. July 17 1915; p 113; pp 2½*; 25c.

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——— *The Newcastle Steel Works, N. S. W.* [An account of their blast furnace operations and steel mills for rolling and refining the pig iron after it is made into steel there].—I. & C. Tr. Rev. Sept. 3 1915; p 275; pp 3*; 35c.

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Estep, H. Cole.—*A Modern Plant for Rolling Iron.* [In general is a description of the works of the St. Louis Screw Co., where special provision is made for cleaning and tumbling scrap. Sectional drawings and illustrations are shown. Powdered coal is used as fuel].—Iron Tr. Rev. July 8 1915; p 83; pp 8*; 25c.

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Weitlaner, R. J.—*Furnace Curves.* [Describes a number of curves and illustrates the same. The main object of this is to allow a comparison of fuels and furnaces and work the latter on a bonus system].—Met. & Chem. Eng. July 1915; p. 425; pp. 3½*; 30c.

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Aldrich, C. H.—*Treatment of Silver Furnace Fume by the Cottrell Process.* [A paper presented before the American Society of Chemical Engineers].—Chem. Eng. Oct. 1915; p 167; pp 3; 35c.

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Christopher, J. E.—*Coal Distillation, Gasification and By-Products.* [A series of articles which appeared in the Science and Art of Mining. The subjects of gas producers, coal distillation and by-products, coke, and by-products from the blast furnace are considered].—Thomas Wall & Sons, Wigan, England; pp 90*; book; 75c.

Diehl, A. N.—*Utilization of Blast Furnace Gas.* [An account of methods used for burning the gas in stoves and boilers with tests made on the same].—I. Tr. Rev. Oct. 28 1915; p 853; pp 3½; Nov. 18 1915; p 993; pp 4*; 50c.

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Beecher, M. F.—*An Investigation of Iowa Fire Clays.* [A number of tests have been made regarding the impurities, vitrification, refractory properties, disintegration from heat, etc.].—Iowa College Bull. 40; pp 117*.

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before the Yorkshire section of the Society of Chemical Industry. Has a description of the methods in which the tests were made with some discussion of the topic and a table giving the results of the experiments].—I. & C. Tr. Rev. June 25 1915; p 889; pp 1⅔*; 35c.

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Addicks, Lawrence. — *Roasting and Leaching Concentrator Slimes Tailings.* [From the A. I. M. E. on tests made by the author at Douglas, Ariz., accompanied with curves showing results. The roasting procedure is also taken up].—Met. & Chem. Engg. Sept. 1 1915; p 4½*; 30c.

Addicks, Lawrence.—*The Electrolysis of Copper Sulphate Liquors Using Carbon Anodes.* [Results of a number of Tests made at Douglas, Ariz., attempting to recover copper from the leached sulphate solution by electrolysis].—Met. & Chem. Engg. Oct. 15 1915; p 748; pp 8*; 30c.

Arentz, S. S.—*Low-Grade Complex Ores of Park City, Utah.* [A brief on each of the vicinities making up the district].—Mg. World Aug. 14 1915; p 252; pp 4; 10c.

Austin, W. L.—*Leaching Copper Ore.* [With various original suggestions the article is a general review of the subject].—M. & S. P. Aug. 7 1915; p 199; pp 2; 20c.

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Coghill, W. H.—*Surface Tension.* [A discussion adding to the article "Flotation at Broken Hill," and gives curves showing the surface to be had with various salts in solution in varying amounts].—M. & S. P. Oct. 9 1915; p 543; pp 2*; 20c.

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Stansbie, J. H.—*Metallurgy.* [The

book is intended to give a general idea of the industry and not details].—Churchill, London; pp 151; $1.40.

Stark, C. J.—*The Romantic Story of Vanadium.* [Its occurrence in Mexico and South America and the refining, mining and transporting of the crude ore].—I. Tr. Rev. Oct. 21 1915; p 781; pp 4*; 25c.

Wells, A. E.; Clevenger, G. H.—*Metallurgical Exhibit at the Panama-Pacific.* [A description of the exhibit and the things it contains].—Mg. World Oct. 2 1915; p 531; pp 3; 10c; Met. & Chem. Engg. Oct. 15 1915; p 743; pp 3*; 30c.

White, C. H.—*Methods in Metallurgical Analysis.* [Quantitative methods for analysis in metallurgical work].—Van Nostrand Co.; pp 356*; $2.50.

——— *Atti Della Associazione fra gli Industriali Metallurgici Italiani.* [The Italian Metallurgical Soc.].—Metallurgi Ital. June 30 1915; p 355; p 30; pp 10; $1.

——— *Analyst and Client.* [Notes on chemical and physical tests, etc., of value to those of the metallurgical industry].—Ridsdale Co., London; pp —; $1.75.

——— *Metallurgy at International Engineering Congress.*—Met. & Chem. Engg. Oct. 1 1915; p 655; pp 6*; 30c.

——— *Mining and Metallurgy at the Exposition.*—M. & S. P. Sept. 11 1915; p 405; pp 4*; 20c.

——— *Rotary Kilns for Desulphurizing and Agglomeration.* [From the Bull. of the A. I. M. E.].—E. & M. J. Oct. 9 1915; p 601; pp 1½; 25c.

POWER AND MACHINERY.*

CHAPTER XIX.

ELECTRICITY

In Mines

Aikens, Warren.—*Installing and Operating Mine Power Plant Generators in Parallel.* [Discusses both water and steam driven types].—Mg. World Sept. 11 1915; p 399; pp 4½*; 10c.

Aikens, Warren.—*Operating Mining Power Plants in Parallel.* [Discusses synchronism and units operated in parallel].—Mg. World Aug. 12 1915; p 283; pp 5*; 10c.

Balzari, R. A.—*Electrification of the Empire Mine.* [A description of the various equipment of late installed].—Jnl. Elect. Power & Gas July 24 1915; p 55; pp 4*; 35c.

Brackett, G. S.—*Comparative Costs of Operating.* [A comparison between electrical and hand methods].—Coll'y Eng. Oct. 1915; p 132; pp 2½*; 35c.

Brackett, Geo. S.—*Motor Haulage and Side Tracks.* [Deals with the arrangements of tracks in coal mines at junctions for both animal and motor haulage].—Coal Age Oct. 16 1915; p 622; pp 4*; 20c.

Brackett, G. S.—*Motor Haulage and Side Tracks.* [General instructions protesting against the hit and miss method of laying out haulage systems].—Coal Age Oct. 9 1915; p 580; pp 2½*; 20c.

Bright, Graham.—*The Modern Electric Mine Locomotive.* [Discussion of various types with tables showing their duties].—A. I. E. E. Aug. 1915; p 1615; pp 6*; 35c; C. Tr. Bull. Oct. 15 1915; p 56; pp 2; 25c; Coll'y Eng. Oct. 1915; p 145; pp 2; 35c.

Broughton, H. H.—*The Electric Crane Applied to the Handling of Coal and Ore.* [Details of electric cranes, etc., for handling mine stock piles].—Elect. July 23 1915; p 575; pp 4*; 35c.

Brown, R. E.—*The Alternating Current Coal Hoist.* [Paper read before the A. I. E. E. treating on a hoist which is operated by compressed air].—C. Tr. Bull. Aug. 16 1915; p 55; pp 2; Sept. 1 1915; p 47; pp 2; 50c.

Burrows, R. P.—*Illumination of Mines.* [Has to do with electric illumination and gives some information on costs].—A. I. M. E. Bull. Nov. 1915; p 2237; pp 9*; 35c. Mg. World Nov. 6 1915; p 729; pp 3¾*; 10c.

Clark, H. H.—*Permissible Explosion-Proof Electric Motors for Mines; Conditions and Requirements for Test and Approval.* [Speaks of types in which electric arcs are at a minimum].—Bureau of Mines Tech. Paper 101; pp 17*. Coll'y Guard, Sept. 10 1915; p 517; pp 1*; 35c. C. Tr. Bull. Aug. 16 1915; p 41; pp 2; 25c.

Cliff, R. C.—*The Power Plant of the North Bulli Colliery, Coledale, N. S. W.* [The main unit is a 400-kw. alternating current motor].—Mg. & Engg. Rev. Oct. 5 1915; p 5; pp 4*; 35c.

Crosby, F. B.—*Variable-Speed A.-C. Motors for Driving Mine Fans.* [A motor which is adjusted for varying speeds and does away with the single and double speed induction types].—Coal Age Sept. 4 1915; p 374; pp 2¾*; 20c.

De Wolfe, E. C.—*Novel Combination Locomotive.* [A storage battery locomotive used in coal mines].—Coal Age Dec. 4 1915; p 923; pp 2¾*; 20c.

Divis, Julius. — *Förder-Maschine für 1300 m Teufe und 2000 kg Nutzlast am Annaschacte in Przibram, Germany.* [An electric hoist in Przibram, Germany, using air-compression for balance].—Zts. Zentral Verb. Bergbau Betriebsel. Dec. 1 1915; p 317; pp 4¼*; 35c.

Fay, A. H.—*Deaths from Explosives and from Electricity.* [Abst. from a U. S. Bur. of Mines paper].—Coal Age Sept. 18 1915; p 454; pp 1; 20c.

Ferey, M.—*The Influence of Atmospheric Electricity in Underground Workings.* [Is a paper contributed to the Société de l'Industrie. It describes the use of electricity for firing from the surface. This is done to avoid the danger of sudden outburst of gas. No picks are allowed to be used on the face of the working].—Coll'y Guard. June 25 1915; p 1326; pp 1*; 35c.

Foley, F. J.—*Combination Gathering*

*Note.—For drills, pumps, fans, haulage and winding engines, dredges, excavators, crushers, separators, conveyors, transportation, machinery, etc., see respectively "Drilling and Boring," "Pumping," "Ventilation" and other appropriate headings in "Mine and Mining," "Mill and Milling," and "Miscellaneous."

Motor. [A locomotive of low height operating from storage batteries].—Coal Age Dec. 4 1915; p 928; pp 2*; 20c.

Fowle, F. F.—*Standard Handbook for Electrical Engineers.* [The book is divided into 25 sections each complete in itself].—McGraw-Hill Book Co.; pp 1984*; $5.

Haggen, E. A.—*Britannia Mine, Howe Sound, B. C.* [A most complete description of the mine and mill operations and construction. A 4-page supplement is given, showing a detailed drawing of the mill. The geology, surroundings, etc., are also given].—Mg. Engg. & Elect. Rec. Aug. 1915; p 129; pp 20*; 35c.

Hay, T. R.—*Economics of the Central Station in Mining.* [Machinery is not described here, but a discussion is made of the use of electricity and arrangement of the equipment, what kind of equipment is necessary for various kinds of work, and where savings can be initiated].—Coal Age July 10 1915; p 44; pp 4*; 25c.

Hoskin, A. J.—*The New Denver Electric Rock Drill.* [To a slight degree the compressed air principal is used here].—Mg. World Oct. 30 1915; p 691; pp 1¼*; 10c.

Humes, J.—*The Silver Hill Underground Hoisting Station, Utah.* [An electrically operated system at the Silver King Coalition property in Utah].—E. & M. J. Nov. 6 1915; p 747; pp 4¾*; 25c.

Howard, L. O.—*Hoisting Works in the Park City District, Utah.* [Electric hoists described].—M. & S. P. Oct. 9 1915; p 545; pp 3*; 20c.

Legrand, Chas.—*Mine Pumping.* [A paper read at the San Francisco meeting of the A. I. M. E. on steam and electric pumps, air lifts, and tests on the same].—Canadian Mg. Jnl. Oct. 1 1915; p 599; pp 3; 35c.

Legrand, Chas.—*Mine Pumping.* [Details on the economic placing of pumps with their duties and advantages of different types].—A. I. M. E. Bull. Sept. 1915; p 1929; pp 7; 35c. C. Tr. Bull. Oct. 15 1915; p 45; pp 3½; 25c. Mg. World Oct. 23 1915; p 652; pp 1; 10c.

Mather, T. A.—*Economy in Ventilating Mines With Purchased Power.* [Paying for power from an outside source has brought to view many unknown leaks in previous power consumption].—Coal Age Sept. 4 1915; p 380; pp 1½; 20c.

Means, C. M.—*The Rotary in Mine Work.* [Describes the economy had in using a rotary converter to change from alternate to direct current].—Coal Age Oct. 30 1915; p 707; pp 1½*; 20c.

Middleton, A. E.—*The Comparative Costs of Compressed Air and Electricity for Use in Mine Stope Haulage.* [A paper read before the S. Afr. Inst. of E. E.].—S. Afr. Mg. Jnl. Oct. 30 1915; p 202; pp 1; Dec. 1915; p 108; pp 1; 70c.

Muirhead, A. B.—*The Development of Electricity in the Scottish Mining Industry.*—I. & C. Tr. Rev. Oct. 22 1915; p 511; pp 1⅓; 35c.

Pearl, H. I.; Green, Joe.—*Electrical Plant of the Wakefield Iron Co., Mich.* [Supplies 2 shafts. Turbo-generators provided with overload device to take up peak loads].—E. & M. J. Aug. 28 1915; p 349; pp 2¾*; 25c.

Pfiffner, E.—*Stromwandler mit Kleiner Induzierter Spannung bei Offenem Sekundärstromkries.* [Describes and gives theory on electric hoists].—Elektrotechnik und Maschinenbau June 13 1915; p 289; pp 2*; 50c.

Proctor, C. L.—*Electricity in Zinc Mining Industry.* [The advantageous use of electricity for mine and mill use is here dealt with].—Zinc & Lead Jnl. Sept. 1915; pp 2*; 20c.

Rider, J. H.—*Electric Winding in South Africa.* [A paper read before the I. of E. E. on using electric hoists at the mines in the Rand district, South Africa].—S. Afr. Mg. Jnl. May 29 1915; p 321; pp 1½; 35c.

Roche, H. M.; Stoddard, J. C.—*Develop Nation's Oldest Iron Mine.* [Empire Steel & Iron Co.'s Mount Hope mines, describing the history, geology, surface and underground arrangements].—Iron Tr. Rev. July 22 1915; p 171; pp 6*; 25c.

Rosenblatt, G. B.—*Granite Mountain Hoist of the North Butte Mining Co., Montana.*—Mg. World Dec. 18 1915; p 967; pp 5¼*; 10c.

Sherman, G. F. G.—*Tramming and Hoisting at Copper Queen Mine, Arizona.* [Gives details regarding efficiency tests, methods of operation and costs in detail. Electric haulage is used].—A. I. M. E. Bull. Sept. 1915; p 1836; pp 51*; 35c.

Smith, R. R.—*Practical Points in Connection with the Use of Electricity in Mines.* [A paper read before the Lancashire branch of the National Assn. of Coll'y Managers].—I. & C. Tr. Rev. Oct. 29 1915; p 542; pp 1½*; 35c.

Snyder, W. T.—*Direct-Current Control for Hoisting Equipment in Industrial Plants.* [A paper read before the A. I. Elect. Eng. dealing mostly with metallurgical plants].—Elect. Aug. 20 1915; p 733; pp 4*; 35c.

Stevenson, John.—*Flame Safety Lamps and Electric Lamps for Use in Mines.* [Compares the electric and flame type of lamps as safety lamps for use in coal mines. Various experimental work is cited in both cases].—Canadian Mg. Inst. Bull. July 1915; p 524; pp 7; 35c.

Sykes, Wilfred.—*A Large Electric Hoist at Butte, Mont.* [The shaft depth here is 4000 ft. and the net load handled is 14,000 lbs, with a maximum hoisting speed of 3000 ft. per minute].—A. I. E. E. Aug. 1915; p 1819; pp 9*; 35c. Canadian Eng. Sept. 9 1915; p 348; pp 1½; 35c. Elect. Oct. 1 1915; p 955; pp 2¼*; 35c.

Thornton, W. M.—*A New Battery Signalling Bell.* [A paper read before the North of England Inst. of Mg. and Mech. Eng].—I. & C. Tr. Rev. Aug. 13 1915; p 191; pp 1⅓*; 35c.

Tupper, C. A.—*Ore Handling System of the Arizona Copper Co.'s Smelter, Arizona.* [The ore is followed from being taken on belt conveyors at the ore beds until it has passed through the furnace and reached the slag pile].—Mg. World Aug. 7 1915; p 205; pp 7*; 10c.

Tupper, C. A.—*Synchronous Motors for Coal-Mine Operations.* [This type of motor tends to correct the low power factor which prevails in underloaded alternating-current systems].—Coal Age Aug. 14 1915; p 251; pp 2; 20c.

Tupper, C. A.—*The Bisbee-Warren District—Copper Queen Mine.* [The property is described in general, giving a review of the transportation, haulage, hoisting and mining methods, with information on the test mill built there].—Mg. World Oct. 2 1915; p 515; pp 8*; 10c.

Wauchope, A.—*Surface Equipment of the Sons of Gwalia Gold Mine, Describing Recent Additions Thereto.* [Combustion engines are used, also electricity].—Jnl. Chamber of Mines Australia July 31 1915; p 158; pp 5*; 35c.

Wintermeyer, Ing. — *Förderkorbbeschickungsvorrichtungen mit elektrischem Antrieb.* [On an electrical method of transportation in mines and mills].—Montanist. Rund. Oct. 16; p 677; pp 6½*; 35c.

Wolf, W.—*Neuere Leonardshaltungen in Bergwerken.* [New electric hoists for mines as used in Germany].—Kali Nov. 15 1915; p 341; pp 6*; 35c.

——— *A New Electric Safety Lamp.* [A type of hat lamp remodeled after the design of the one which took first prize at a recent British competition].—Coal Age Aug. 7 1915; p 218; pp 2½*; 20c.

——— *A Notable Electric Winder.* [Reference is made to the profile of a hoisting drum with regard to the work done, etc.; also giving a description of some hoists now in operation].—Elect. Sept. 24 1915; p 909; pp 4*; 35c.

——— *Application of Electric Power at the Soudan Mine, Pa.*—Coal Age Aug. 14 1915; p 250; pp 1*; 20c.

——— *Causes of Electrical Accidents in British Collieries.* [A report on accidents which occurred in the North and Midland divisions in England, being made by the British Govt. Mine Inspector].—Elect. Rev. & West. Elect. Nov. 13 1915; p 903; pp 1*; 20c.

——— *Cost of Upkeep of Electric Cap Lamps.* [The cost at the Keystone Coal & Coke Co. was 1 ct. per lamp per shift].—Coal Age Oct. 2 1915; p 543; pp 2*; 20c.

——— *East Rand Proprietary Mines' Pumping Operations and Power Plant.* [The pumps work on an average lift of 4000 ft.].—Mg. World Sept. 11 1915; p 404; pp 1*; 10c.

——— *Electric Generating Plant at Grassmoor Collieries.* [The generators are driven with gas engines].—I. & C. Tr. Rev. July 2 1915; p 12; pp 1⅓*; 35c.

——— *Electric Hoist of the Incline Railway at Hamilton, Ont., Canada.* [Gives a description of the incline road and the hoist itself. Figures giving detailed information regarding the equipment and method of operation will also be found].—Eng. News July 8 1915; p 49; pp 2*; 25c.

——— *Electric Underground Hoists for South African Mines.* [75 hp. geared hoists].—I. & C. Tr. Rev. July 2, 1915; p 11; pp 1*; 35c.

——— *Electrical Accidents in Mines.* Elect. Rev. London Dec. 10 1915; p 761; pp 1½; 35c.

——— *Electricity in Marble Quarrying.* [The power used is estimated at 14,000 hp.].—Elect. Rev. & West. Elect. Nov. 27 1915; p 963; pp 4*; 20c.

——— *Electricity in Sand and Gravel Plants, Massachusetts.* [Treats on the employment of this agent in both excavating and transporting the materials].—Elect. Rev. & West. Elect. Oct. 2 1915; p 599; pp 4*; 20c.

——— *Main Island Creek Coal Co., Omar, W. Va.* [A treatise on the social conditions and management of the mine, with a description of their methods of haulage, mining and preparation for the market].—Elect. Mg. July 1915; p 49; pp 28*; 20c.

——— *Ore Handling by the Magma Copper Co., Arizona.* [A 30-mile railroad connects the mines and mills with the

main line. The mills and mines are also spoken of in regard to their general operation].—Mg. World Sept. 11 1915; p 405; pp 2*; 10c.

——— *Output of Coal and the Use of Electricity in Mines of England.* [A report of H. M. Inspector of Mines.].—Elect. Rev. Oct. 22 1915; p 538; pp 2; 35c.

——— *Power Plant of the Granby Mining & Smelting Co.* [Details of the electrical and steam power equipment at the zinc smelter].—E. & M. J. July 17 1915; p 113; pp 2½*; 25c.

——— *The Use of Compressed Air on the Rand, South Africa.* [About 3500 drills are in use daily, the supply coming from electric compressors. The method of testing the compressors is also given].—S. Afr. Mg. Jnl. June 26 1915; p 417; pp 1½; 35c.

——— *Unwatering the Downtown District at Leadville, Colo.* [Mechanical details and methods are brought out here. The pumps handle 1500 gals. with 410-ft. head].—M. & S. P. Sept. 4 1915; p 355; pp 3½*; 20c.

In Mills

Aikens, Warren.—*Electric Power for Montana Mines, Mills and Smelters.* [Power is centralized at one station and delivered to the various mines of the district and the hoists are run with air instead of steam].—Mg. World July 31 1915; p 171; pp 5*; 10c.

Balzari, R. A.—*Electrification of the Empire Mine.* [A description of the various equipment of late installed].—Jnl. Elect. Power & Gas July 24 1915; p 55; pp 4*; 35c.

Brackett, G. S.—*Comparative Costs of Operating.* [A comparison between electrical and hand methods].—Coll'y Eng. Oct. 1915; p 132; pp 2½*; 35c.

Bradley, Linn.—*Practical Application and Progress of the Research Corporation.* [A paper read before the A. I. M. E. on the precipitation of flue dust, etc., by means of electricity].—Elect. July 23 1915; p 582; pp 3*; 35c.

Campbell, E. D.—*On the Influence of Heat Treatment on the Specific Resistance and Chemical Constitution of Carbon Steel.* [A paper read before Iron & Steel Inst].—Elect. Oct. 8 1915; p 27; pp 2; 35c.

Dobbelstein, K.—*Beschickung von Koksöfen mit Kleinen, Elektrisch Betrieben Fülltrichterwagen.* [Electric haulage in coke-oven plants].—Glückauf Oct. 9 1915; p 989; pp 2*; 50c.

Fowle, F. F.—*Standard Handbook for Electrical Engineers.*—McGraw-Hill; pp 2000*; $5.

Lankton, C. S.—*Purchased Power for the Steel Mill.* [The advantages of a central plant from which power may be purchased].—I. Tr. Rev. Sept. 23 1915; p 573; pp 2½; 25c.

Lewis, J. H.—*Electrostatic Separation of Pyritic Zinc Ores, Wisconsin.* [The pyrite is oxidized in a roaster to a magnetic oxide].—M. & S. P. Dec. 18 1915; p 927; pp 2½*; 20c.

Meade, N. G.—*Electricity in Cement Manufacture.* [Deals with electric drive and central station service].—Elect. Rev. & Western Elect. Aug. 14 1915; p 273; pp 2½*; 25c.

Means, C. M.—*Canonsburg Gas Coal Co.'s Plant, Pa.* [Describes the hoist. Electricity is used throughout].—Coal Age Dec. 4 1915; p 921; pp 1¾*; 20c.

Proctor, C. L.—*Electricity in Zinc Mining Industry.* [The advantageous use of electricity for mine and mill use is here dealt with].—Zinc & Lead Jnl. Sept. 1915; pp 2*; 20c.

Wright, C. W.—*Magnetic Separation in Sardinia.* [Zinc-ore is treated here containing siderite and pyrite].—E. & M. J. Dec. 4 1915; p 911; pp 2¼*; 25c.

——— *Power Plant of the Granby Mining & Smelting Co.* [Details of the electrical and steam power equipment at the zinc smelter].—E. & M. J. July 17 1915; p 113; pp 2½*; 25c.

——— *The Ideal Brick Plant—Electrically Driven.* [A description of an ideal plant which does not exist, but which has the possibility of doing so].—B. & C. Rec. Oct. 19 1915; p 597; pp 3*; 30c.

Hydroelectric

Adsit, C. G.; Hammond, W. P.—*Construction Elements of the Tallulah Falls Development, Georgia.* [This hydroelectric plant is operated under one of the greatest heads in the world. Costs are given].—A. I. E. E. Bull. Oct. 1915; p 2497; pp 50*; 35c.

Aikens, Warren.—*Electric Power for Montana Mines, Mills and Smelters.* [Gives details on the construction and operation of the hydro-electric plants in the Butte district, Montana].—Mg. World July 17 1915; p 91; pp 6*; 10c.

Aikens, Warren.—*Installing and Operating Mine Power Plant Generators in Parallel.* [Discusses both water and steam driven types].—Mg. World Sept. 11 1915; p 399; pp 4½*; 10c.

Ellicott, E. B.; Jackson, W. B.—*Ten Years of Evolution of Hydroelectric Units.*—Jnl. of West Soc. of Eng. Oct. 1915; p 613; pp 16*; 60c.

Goodrich, R. R.—*Hydroelectric Treatment of Copper Ores.* [A paper read before the A. I. M. E.].—Mg. World Nov. 20 1915; p 812; pp ¾; 10c.

Harza, L. F.—*Report on the Columbia River Power Project.* [An exhaustive report on the plant, power development and the possible market for the electric power generated from the Columbia river near Dalles, Ore.].—Jnl. of Elect. Power & Gas Nov. 13 1915; p 369; pp 6½*; p 445; pp 4½*; 70c.

Henry, G. J.—*Controlling the Water Column in Hydroelectric Plants*—Jnl. of Elect. Power & Gas Dec. 18 1915; p 465; pp 2¾*; 35c.

Henshaw, F. F.—*Report on the Columbia River Power Project.*—Jnl. of Elect. Power & Gas Dec. 18 1915; p 461; pp 4*; Dec. 25 1915; p 480; pp 2½; 70c.

Jones, O. D.—*The Olympic Power Co.'s System.* [A description of their equipment, operation and arrangement].—Jnl. of Elect. Power & Gas Oct. 9 1915; p 279; pp 9*; Oct. 16: p 297; p 5; 70c.

Linden, H. E.—*Green Creek Hydroelectric Development, California.* [A historical and current review of the plant supplying the Standard Mining Co., at Bodie, Cal.].—Jnl. of Elect. Power & Gas Oct. 23 1915; p 317; pp 1¾*; 35c.

McGrath, J. W.—*Water Powers of Labrador.* [Describes the natural falls in this district, which has scarcely been scratched].—Canadian Mg. Jnl. Oct. 15 1915; p 635; pp 1; 35c.

Netland, L.—*Comox Mines, Vancouver Island, B. C.* [Brings out the hydroelectric plant, electric hoist and methods used for sizing, preparation, etc.].—Coll'y Eng. Sept. 1915; p 59; pp 4½*; 30c

Ohren, Geo. A.—*Water Power Development in British Columbia.* [An account of the equipment and operations of the various hydroelectric plants in B. C.].—Mg. World Oct. 9 1915; p 559; pp 5½*; 10c.

Perkins, F. C.—*Hydroelectric Developments in Canadian Prairie Provinces.* [Includes the western part of Canada].—Pract. Eng. Dec. 15 1915; p 1119; pp 3¾*; 20c.

Sherman.—*Electric Mine Haulage at the Copper Queen, Arizona.* [From the proceedings of the A. I. M. E., giving figures and description on the haulage at this mine].—Mg. World Oct. 9 1915; p 565; pp 1½*; 10c.

Vaughan, J. F.—*Supplemental Power for Hydroelectric Systems.* [Discusses the use of emergency steam plants in developing hydroelectric power].—A. I. E. E. Bull. Oct. 1915; p 2307; pp 13*; 35c. Canadian Eng. Nov. 4 1915; p 546; pp 3; 35c.

Wilcox, A. L.—*A Peruvian Hydroelectric Installation.* [A plant installed in the Cerro de Pasco district, Peru].—Jnl. of Elect. Power & Gas Sept. 25 1915; p 229; pp 3½*; 35c.

——— *Calgary's Electric Supply System.* [A general description of the plant in Alberta, Canada].—Jnl. of Elect. Power & Gas Dec. 18 1915; p 457; pp 3¾*; 35c.

——— *Combination Steam and Water Plant.* [A small hydroelectric plant in combination with a steam power plant].—Pract. Eng. Nov. 15 1915; p 1033; pp 3½*; 20c.

——— *Hydroelectric Development in Japan.* [Is a detailed description of the equipment both electrical and hydraulic with illustrations showing their arrangement].—Jnl. Elect. Power & Gas July 3 1915; p 1; pp 3½*; 35c.

——— *Hydroelectric Plans of Concrete in Western United States.*—Rock Prod. & Bldg. Materials Sept. 7 1915; p 23; pp 3*; 20c.

——— *Lake Margaret Hydroelectric Power Scheme, Mount Lyell, Australia.*—Proc. Aus. Inst. of M. E. N. No. 9 1915; p 157; pp 26*; 70c.

——— *Swedish State Hydroelectric Power Station at Porjus, Sweden.* [A government-owned plant built to electrify an iron-ore railway].—Engg. Oct. 15 1915; p 385; pp 3½*; 35c.

——— *The State and the Hydroelectric Power Problem in Norway.* [An account of the water power available in Norway, with tables and description of various falls in the country. The investigations are underway by the government].—Engg. Oct. 8 1915; p 372; pp 2*; 35c.

General

Adams, F. W.—*The Diffusion of Carbon in Iron.* [A paper read before the Iron and Steel Inst., London. The experiment is of an electrical nature].—Engg. July 23 1915; p 95; pp 2½*; 35c.

Anderson, Thomas.—*Some Electrical Troubles and Their Remedies.* [A paper read before the Assn. of Elect. Mg. Eng.].—I. & C. Tr. Rev. Dec. 24 1915; p 776; pp 1½; 35c.

Anderson, A. E.—*The Galvanometer and Its Advantages in Electrical Blasting.*

[A means for firing charges simultaneously instead of in rotation].—Colo. School of Mines Mag. Oct. 1915; p 195; pp 1½; 35c.

Austin, F. E.—*Directions for Designing, Making and Operating High Pressure Transformers.* [First takes up the theory and construction of the machines].—Thayer College; pp 46*; 65c.

Beard, J. R.—*The Design of High Pressure Distribution Systems.* [From a paper read before the Inst. of Elect. Eng. on distribution of electricity in the mines].—Coll'y Guard. Dec. 31 1915; p 1337; pp 2⅓*; 35c.

Beckman, J. W.—*The Electro-Chemical Possibilities of the Pacific Coast.* [A paper read before the American Electro-Chemical Soc., telling of the raw materials to be had, the power available, and various costs].—Chem. Eng. Oct. 1915; p 136; pp 4½; 35c.

Bryan, J. H.—*Electric Welding.*—Proc. of Eng. Club, Phil. July 1915; p 40*; 35c.

Copeland, D.; Hollister, S. E.—*Tin-Ore Dressing at Llallagua, Bolivia.* [Magnetic separation and roasting follow the concentration on jigs and tables].—E. & M. J. Sept. 25 1915; p 518; pp 3*; 25c.

Dean, G. R.—*The Calculation of the Long Distance Transmission Line Under Constant Alternating Voltage.*—A. I. E. E. Bull. Oct. 1915; p 2241; pp 22; 35c.

Dorsey, H. G.—*Use of Electricity in Melting Brass.* [Paper presented at the meeting of the American Inst. of Metals].—I. Tr. Rev. Aug. 12 1915; p 318; pp 2*; 25c.

Edwards, G. E.—*Commutator Troubles Reduced by Slotting.* [Slotting the mica in commutators of electrical equipment].—Mg. World July 17 1915; p 107; pp 1; 10c.

Eimer, H.—*Die Wirtschaftlich Günstigste Spannung für Fernübertragungen Mittelst Freileitungen.* [A German book on economical pressures for overhead power lines carrying heavy loads].—Julius Springer, Berlin; pp 113*; $1.25.

Fay, A. H.—*Deaths from Explosives and from Electricity.* [Abst. from a U. S. Bur. of Mines paper].—Coal Age Sept. 18 1915; p 454; pp 1; 20c.

Hanemann, H.; Merica, P. D.—*Magnetic Studies of Mechanical Deformation in Certain Ferromagnetic Metals and Alloys.*—A. I. M. E. Bull. Dec. 1915; p 2371; pp 16*; 35c.

Langenberg, F. C.; Webber, R. G.—*Effect of Hysteresis on Mild Steel.* [A study on the effect of the micro-structure on the magnetic properties of mild steel for armatures, etc.].—I. Tr. Rev. Sept. 23 1915; p 576; pp 2*; 25c.

Maccall, W. T.—*Continuous Current Electrical Engineering.* [A college text]. Univ. Tutorial Press, London; pp 466; $1.75.

McLain, R. H.—*Electrical Controllers in the Foundry.* [A paper read before the A. I. of E. E.].—I. & C. Tr. Rev. Sept. 3 1915; p 287; pp 1½*; 35c.

Miller, J. M.—*Effective Resistance and Inductance of Iron and Bimetallic Wires.* U. S. Bur. of Stand. Bull. 12:2; p 207; pp 62*.

Ohren, Geo. A.—*Water Power Development in British Columbia.* [An account of the equipment and operations of the various hydroelectric plants in B. C.].—Mg. World Oct. 9 1915; p 559; pp 5½*; 10c.

Richards, J. W.—*Electrical Applications of Aluminum.*—Jnl. of Elect. Power & Gas Oct. 9 1915; p 288; pp 1; 35c.

Vaughan, J. F.—*Supplemental Power for Hydroelectric Systems.* [Discusses the use of emergency steam plants in developing hydroelectric power].—A. I. E. E. Bull. Oct. 1915; p 2307; pp 13*; 35c. Canadian Eng. Nov. 4 1915; p 546; pp 3; 35c.

Yensen, T. D.—*The Magnetic Properties of Some Iron Alloys Melted in Vacuo.*—A. I. E. E. Bull. Oct. 1915; p 2455; pp 42*; 35c. Elect. Dec. 10 1915; p 339; pp 3½*; 35c.

——— *American Institute of Electrical Engineers.* [Annual Convention held at Deer Park, Md., on June 29, 1915. Gives the details of the proceedings at the meeting with synopses of the principal discussion and papers read].—Elect. Rev. July 10 1915; p 69; pp 7; 20c.

——— *Association of Mining Electrical Engineers.* [Gives a list of the new members. The main part of the article is synopses of the various discussions and papers presented].—I. & C. Tr. Rev. June 25 1915; p 885; pp ½; 35c.

——— *Electric Control-Gear for Air-Compressor Motor.*—Engg. July 16 1915; p 56; pp 1*; 35c.

——— *Electrical Papers at the Manchester Meeting of the British Association for the Advancement of Science.*—Elect. Rev. & West. Elect. Oct. 9 1915; p 672; pp 4½; 25c.

——— *Foundations for Transmission Line Towers and Tower Erection.* [Abstract from the A. I. R. E.].—Elect. Nov. 19 1915; p 230; pp 4*; 35c.

——— *Hamilton Electric Incline Railway.* [Is an incline for handling people,

freight, etc., at Hamilton Mountain Park, Ontario].—S. L. Mg. Rev. July 15 1915; p 13; pp 2*; 25c.

——— *Primary Mercurial Resistance Standards.*—Mg. World Nov. 27 1915; p 856; pp ½; 10c.

——— *2000-Kilowatt Mixed-Pressure Steam Turbine.* [Features of construction for a turbine that can use any class of steam and in which there is a low consumption].—Practical Eng. Oct. 1 1915; p 909; pp 5½*; 20c.

COMPRESSED AIR

Armstrong, W. H.—*The Pneumatic Tie Tamper.*—Comp. Air Nov. 1915; p 7796; pp 3*; 20c.

Brown, R. E.—*The Alternating Current Coal Hoist.* [Paper read before the A. I. E. E., treating on a hoist which is operated by compressed air].—C. Tr. Bull. Aug. 16 1915; p 55; pp 2; 25c.

Buzzo, A. E.—*The Jackhamer in the Contracting Field.*—Comp. Air Nov. 1915; p 7787; pp 2½*; 20c.

Chodzko, A. E.—*The Hydraulic Compression of Air.* [Is the common method of falling water to create a vacuum].—M. & S. P. Aug. 14 1915; p 233; pp 4¾*; 20c.

Cornet, F. C.—*Reminiscences in Ventilation.* [Recollections of French and Belgian engineers in regard to the testing of pneumatic ventilating appliances].—Coal Age Sept. 4 1915; p 382; pp 2*; 20c.

Divis, Julius.—*Förder-Maschine für 1300 m Teufe und 2000 kg Nutzlast am Annaschacte in Przibram, Germany.* [An electric hoist in Przibram, Germany, using air-compression for balance].—Zts. Zentral Verb. Bergbau Betriebsel. Dec. 1 1915; p 317; pp 4¼; 35c.

Heidelberg, F. M.—*Compressed-Air Equalizing System at the Copper Queen Mine, Arizona.*—E. & M. J. Dec. 25 1915; p 1047; pp 2¼*; 25c.

Humes, J.—*The Silver Hill Underground Hoisting Station, Utah.* [An electrically operated system at the Silver King Coalition property in Utah].—E. & M. J. Nov. 6 1915; p 747; pp 4¾*; 25c.

Legrand, Chas.—*Mine Pumping.* [Tells of different styles of pumps and gives tables for their comparison. Includes electric, steam and air-lift pumping].—C. Tr. Bull. Oct. 15 1915; p 45; pp 3½; 25c.

Legrand, Chas.—*Tests on Various Steam and Electrically Operated Pumps.* [The tests were made at the Old Dominion Copper property].—Mg. World Oct. 23 1915; p 652; pp 1; 10c.

Mavor, Sam.—*Compressed Air for Coal-Cutters.* [Abst. of a paper read before the Institution of Mining Engineers].—Coll'y Guard. Sept. 17 1915; p 570; pp 3*; Sept. 24 1915; p 622; pp 1⅓*; Oct. 1 1915; p 673; pp 1⅓*; $1.05. Sci. & Art of Mg. Oct. 9 1915; p 97; pp 3*; Oct. 23 1915; p 126; pp 1½; 70c.

McPhee, Richard.—*Compressed-Air Haulage in a Scottish Colliery.* [A paper read before the Assn. of Coll'y Mgrs. on a system of haulage actuated by cable systems].—I. & C. Tr. Rev. Oct. 1 1915; p 419; pp 1*; 35c.

Middleton, A. E.—*The Comparative Costs of Compressed Air and Electricity for Use in Mine Stope Haulage.* [A paper read before the S. Afr. Inst. of E. E.].—S. Afr. Mg. Jnl. Oct. 30 1915; p 202; pp 1; Dec. 1915; p 108; pp 1; 70c.

Phelps, C. C.—*Compressed Air Construction Work and Repair Work.*—Coal Age Dec. 18 1915; p 1065; pp 3*; 20c.

Richards, Frank.—*To Get Dry Compressed Air.* [From the Practical Engineer discussing a means for reducing moisture in the air to be compressed].—Comp. Air Sept. 1915; p 7715; pp 2¼; 20c.

Rowland, R. H.—*Points About Air-Compressor Practice.* [Abstract from Power on theory and practice of benefit in air compressing].—Comp. Air Sept. 1915; p 7723; pp 4½*; 20c.

Weston, E. M.—*Stoping Methods and Drilling Problems on the Witwatersrand* [A discussion of the methods of mining and piston and hammer air drills is taken up].—S. Afr. Mg. Jnl. Oct. 16; p 161; pp 1; Oct. 23, 1915; p 183; pp 1¼; 70c.

——— *A High Pressure Steam Air Compressor.* [A detailed description of the same].—I. Tr. Rev. Dec. 23 1915; p 1239; pp 1; 25c.

——— *Air-Compressors for Colliery Work.* [Both steam and electrical driven types are described. They are used in the Scotch coal mines].—Coll'y Guard. Sept 3 1915; p 467; pp 1⅓*; 35c.

——— *Electric Control-Gear for Air-Compressor Motor.*—Engg. July 16 1915; p 56; pp 1*; 35c.

——— *Midland Institute of Mining, Civil and Mechanical Engineers, England.* [Proceedings of the meeting and briefs on the papers, "Compressed Air and Coal Cutting" and "Earth Movements on Coal Measures"].—Coll'y Guard. Oct. 8 1915; p 725; pp 3; 35c.

——— *The Testing of Air Compressors.* [An abstract from the same article in Engineering reviewing the subject in

a somewhat theoretical way].—Comp. Air Aug. 1915; p 7689; pp 4*; 20c.

——— *The Use of Compressed Air on the Rand, South Africa.* [About 3500 drills are in use daily, the supply coming from electric compressors. The method of testing the compressors is also given]. S. Afr. Mg. Jnl. June 26 1915; p 417; pp 1½; 35c.

——— *Use of Air Drilling Machines in Coal Mines.* [The jackhamer drill is given prominence].—Coal Age Aug. 21 1915; p 292; pp 1½*; 20c.

COMBUSTION ENGINES

Bencel, Paul A.—*High Compression Oil Engines for Mine Service.* [Is a complete description of engines similar to the Diesel with 50 to 200 hp.].—Mg. World July 31 1915; p 180; pp 2*; 10c.

Copeland, D.; Hollister, S. E.—*Tin-Ore Dressing at Llallagua, Bolivia.* [Discusses the grade of tin made, gives a method for its assay, power used in concentrating and various costs].—E. & M. J. Oct. 2 1915; p 555; pp 4*; 25c.

Deerenhardt, W. R.—*Wood-Gas Plants for Mines.* [In Australia wood is used in gas producers and the product used in combustion engines].—Mg. Mag. Oct. 1915; p 203; pp 4*; 60c.

Fisk, G.—*How to Select Your Prime Mover.* [Hints on figuring cost of power in the use of steam turbines, gas and Diesel engines].—I. Tr. Rev. Sept. 23 1915; p 569; pp 4*; 25c.

Freyn, H. J.—*Notes on the Utilization of Coke-Oven and Blast-Furnace Gas for Power Purposes.* [A paper read before the A. I. M. E. on the using of waste gases for combustion engines].—I. & C. Tr. Rev. Aug. 6 1915; p 160; pp 4½; 35c.

Goldingham, A. H.—*Diesel Engines.*—Spon & Chamberlain, N. Y.; pp 206; $3.

Howell, S. M.—*Development of the Crude Oil Engines.* [Evolution of the Diesel engine so as to use crude oil].—Pract. Eng. Nov. 15 1915; p 1049; pp 2¾*; 20c.

Lucke, C. E.—*Design of Surface Combustion Appliances.* [Abst. from a paper read before the American Gas Inst.].—School of Mines Qrt. April 1915; p 233; pp 16*; 60c.

Megson, J. E.; Jones, H. S.—*Diesel Engine Practice.* [Explains theory and operation].—Jnl. Elect. Power & Gas; p 442; pp 2½*; Dec. 4 1915; p 423; pp 4¼*; Dec. 18 1915; p 468; pp 2*; Dec. 25 1915; p 483; pp 1¾; $1.40.

Smith, P. H.—*The High Speed Diesel Engine.* [Comparative diagrams for high and low speed engines].—Petro. World Oct. 1915; p 504; pp 3*; 35c.

Streeter, R. L.—*Internal Combustion Engines.* [A general text on the subject, including the use of fuels and a comparison of costs].—McGraw-Hill; pp 409*; $4.

Wauchope, A.—*Surface Equipment of the Sons of Gwalia Gold Mine, Describing Recent Additions Thereto.* [Combustion engines are used, also electricity]. —Jnl. Chamber of Mines Australia July 31 1915; p 158; pp 5*; 35c.

——— *A Heater for Utilizing Gas Engine Exhaust.* [The hot gas from the exhaust circulates through the heater as in a fire-tube boiler].—Engg. Digest Sept. 1915; p 89; pp ¾*; 30c.

——— *Different Types of American Diesel Engines at Present Built in This Country.*—Mg. World Nov. 27 1915; p 857; pp ¾; 10c.

——— *Gasoline Shovels Auxiliary to Steam Equipment.* [A gasoline engine used in conjunction with a steam engine in steam shovel work].—E. & M. J. Nov. 13 1915; p 806; pp 1*; 25c.

——— *Herbert Mine of the Connellsville Central Coke Co., Pa.* [Explains the operation of their underground haulage system, which employs gasoline locomotives].—Coal Age Sept. 11 1915; p 414; pp 3½*; 20c.

——— *The Mechanical World Pocket Diary and Year Book for* 1916. [A concise treatise on steam and combustion engines, testing the same, steel construction, and information for the machine and repair shop].—Norman Remington Co., Baltimore; pp 428*; book; 25c.

STEAM AND STEAM ENGINES

Bacon, C. J.—*How to Utilize Waste Heat Boilers.* [In a foundry this system is saving 250 lbs. of coal per ton of ingots].—I. Tr. Rev. Dec. 23 1915; p 1225; pp 6*; 25c.

Bissell, H. R.—*Barometric Condenser Drain.* [A method for draining a line carrying steam under 28 ins. vacuum].—Coal Age Nov. 20 1915; p 841; pp 1½*; 20c.

Brinley, C. C.—*Reducing Costs with Mechanical Stokers.* [Shows where a saving can be had in both labor and fuel bill, besides describing some kinds of stokers and grates].—Engg. Mag. Nov. 1915; p 276; pp 17*; 35c.

Burgess, G. K.; Merica, P. D.—*An Investigation of Fusible Tin Boiler Plugs.* —U. S. Bur. of Stand. Tech. Paper No. 53; pp 37*.

Dalby, W. E.—*Steam Power.* [The first chapter is elementary to help the steam laboratory student after which a complete yet clear and concise description of steam power plants follows].—Arnold, London, pp 760*; $6.

Diehl, A. N.—*Utilization of Blast Furnace Gas.* [Paper read before the Iron & Steel Inst. showing the use of blast furnace gas in developing power].—I. Tr. Rev. Nov. 25 1915; p 1040; pp 3*; Nov. 18; p 993; pp 3*; 50c.

Fisk, G.—*How to Select Your Prime Mover.* [Hints on figuring cost of power in the use of steam turbines, gas and Diesel engines].—I. Tr. Rev. Sept. 23 1915; p 569; pp 4*; 25c.

Foster, E H.—*Superheated Steam in Pumping Engines.* [Reprint of an article in the Jnl. of the New England Water Works Assn.].—Foster, N. Y.; pp 14*.

Goodenough, G. A.—*Properties of Steam and Ammonia.* [A technical study involving thermo-dynamics].—J. Wiley & Sons; pp 108*; $1.25.

Hawkins, J. C.—*Increasing the Steam Pressure.* [A method for calculating the saving in steam accompanied with indicator cards, etc.]—Practical Eng. Oct. 1 1915; p 914; pp 1½*; 20c.

Hays, J. W.—*Combustion and Smokeless Furnaces.* [The subject is commenced with the most elementary phases and progresses to the more advanced study of the subject].—J. W. Hays, Chicago; pp 118*; $2.

Hays, J. W.—*How to Build Up Furnace Efficiency.* [Discusses the ways in which fuel is wasted and means for stopping this waste].—J. W. Hays, Chicago; pp 126*; $1.

Hodgson, J. T.—*Modern Boiler-Room Practice and Smoke Abatement.* [A plain account of the factors which make for economic production of steam and methods for abating excessive smoke, etc.].—Railway Engineer, London; $1,25.

Hubbard, C. L.—*Ordinary Wastes in the Power Plant.* [A treatise on the mechanical efficiency of steam power plants].—Engg. Mag. Sept. 1915; p 809; pp 9*; 35c.

Ingham. W.—*The Water Supply of the Rand.* [From an address to the S. A. I. of E.].—S. Afr. Mg. Jnl. Aug. 14 1915; p 559; pp 1; 35c.

Johnson, J. E., Jr.—*Blast-Furnace Auxiliaries and General Arrangement.* [Shows plans of the general arrangement of various plants with good locations for power plants].—Met. & Chem. Engg. Aug. 15; p 495; pp 4½*; 30c.

Keely, J.—*Mining Coal Without a Profit.* [A protest inducing both the miner and consumer to be more economical].—Coal Age Oct. 16 1915; p 620; pp 1½; 20c.

Kent, Wm.—*Steam-Boiler Economy.* [A treatise on the theory and practice of fuel economy].—Wiley & Sons; pp 717*; $4.50.

Kershaw, B. C.—*Boiler Corrosion.* [Abst. from the "Analyst," giving the effects of salts in feed-water on boiler life and management].—Mg. & Engg. Rev. Oct. 5 1915; p 12; pp 4; 35c.

Kratz, A. P.—*A Study of Boiler Losses.* [Curves and tests on the study; from Univ. of Il. Bull.].—Practical Eng. Sept. 1 1915; p 820; pp 4½*; 20c.

Langworthy, R. A.—*Blower Installations and Air Ducts.* [Various arrangements for forced draft stokers].—Pract. Eng. Dec. 1 1915; p 1078; pp 2½*; 20c.

Ledeboer, J. H.—*The Application of Surface Combustion.* [The use of combustion of this nature in metallurgy and steam making].—Aust. Inst. of M. E. No. 17; p 39; pp 20*; 50c.

Legrand, Chas.—*Mine Pumping.* [Details on the economic placing of pumps with their duties and advantages of different types].—A. I. M. E. Bull. Sept. 1915; p 1929; pp 7; 35c. Canadian Mg. Jnl. Oct. 1 1915; p 599; pp 3; 35c. C. Tr. Bull. Oct. 15 1915; p 43; pp 3½; 25c.

Legrand, Chas.—*Tests on Various Steam and Electrically Operated Pumps.* [The tests were made at the Old Dominion Copper property].—Mg. World Oct. 23 1915; p 652; pp 1; 10c.

Newman. M. F.—*Purifying Water for Mine Power Plants.*—Mg. World Nov. 27 1915; p 851; pp 1; 10c.

Nickel, F. F.—*Direct-Acting Steam Pumps.* [Gives details in a general way in regard to the direct-acting type].—McGraw-Hill Book Co.; pp 254*; $3.

Parker L. H.—*Cooling Ponds for Condensing Engines.* [A paper read before the National Assn. of Cotton Mfg.].—Spray Engg. Co.; pp 25*.

Pearl, H. I.; Green, Joe.—*Electrical Plant of the Wakefield Iron Co., Mich.* [Supplies 2 shafts. Turbo-generators provided with overload device to take up peak loads].—E. & M. J. Aug. 28 1915; p 349; pp 2¾*; 25c.

Stone, S. R.—*Small Steam Turbines for Mine Power Plants.*—Mg. World Aug. 7 1915; p 212; pp 3; 10c.

Tenney, E. H.—*Test Methods for*

Steam Power Plants. [A reference book for power station engineers, superintendents and chemists].—Van Nostrand; pp 224*; $2.50.

Trautschold, R.—*Power-House Chimneys for Steam Sizes of Anthracite.* [Brings out points regarding the theory and practice in the use of natural drafts].—Coal Age Sept. 11 1915; p 418; pp 3½*; 20c.

Trautschold, Reginald. — *Pulverized Coal as Fuel for the Steam Power House.* [A straightforward discussion of the subject].—Steam Oct. 1915; p 97; pp 2; 35c.

Vaughan, J. F.—*Supplemental Power for Hydro-Electric Plants.* [A paper read before the A. I. E. E.].—Canadian Eng. Nov. 4 1915; p 546; pp 3; 35c.

Westcott.—*Some Problems of Furnace and Boiler Economy.* [Deals with efficiency of the mechanical handling of materials and economy to be had in the burning of the fuel].—Steam Nov. 1915; p 130; pp 3*; 35c.

Young, C. M.—*Lucerne Power Plant and Tipple.* [Is a complete review of the sorting for market and the steam power equipment].—Coll'y Eng. Aug. 1915; p 1; pp 5*; 30c.

——— *A High Pressure Steam Air Compressor.* [A detailed description of the same].—I. Tr. Rev. Dec. 23 1915; p 1239; pp 1; 25c.

——— *A Serviceable Coal Chart.* [A description and reproduction of the chart accepted by the National District Heating Assn., from which the cost of steam with a given grade of coal under various conditions can be readily obtained].—E. & M. J. Oct. 16 1915; p 636; pp 1¾*; 25c.

——— *Boiler Economy.* [From a Manchester Steam Users' Assn. paper].—I. & C. Tr. Rev. Oct. 8 1915; p 447; pp 1½; 35c.

——— *Boiler Feed Water.* [Quality of good, fair and bad feed water, giving results had from its use].—Pract. Eng. Nov. 15 1915; p 1038; pp 2½; 20c.

——— *Power Plant of the Granby Mining & Smelting Co.* [Details of the electrical and steam power equipment at the zinc smelter].—E. & M. J. July 17 1915; p 113; pp 2½*; 25c.

——— *The Mechanical World Pocket Diary and Year Book for* 1916. [A concise treatise on steam and combustion engines, testing the same, steel construction, and information for the machine and repair shop].—Norman Remington Co., Baltimore; pp 428*; book; 25c.

——— *Transactions of the American Institute of Chemical Engineers.* [A compilation of various papers read at their meetings].—Van Nostrand; pp 268*; $3.

——— *2,000-Kilowatt Mixed-Pressure Steam Turbine.* [Features of construction for a turbine that can use any class of steam and in which there is a low consumption].—Practical Eng. Oct. 1 1915; p 909; pp 5½*; 20c.

GAS PRODUCERS; PRODUCER GAS

Degenhardt, W. R.—*Wood-Gas Plants for Mines.* [In Australia wood is used in gas producers and the product used in combustion engines].—Mg. Mag. Oct. 1915; p 203; pp 4*; 60c.

Gwosdz, J.—*Die Neuere Entwicklung der Wassergaserzeuger.* [A new type of water gas producer].—Glückauf July 10 1915; p 681; pp 4½*; July 17 1915; p 708; pp 5*; July 3 1915; p 653; pp 7*; July 24 1915; p 736; pp 3*; $2.

Huels, F. W.—*The Peat Resources of Wisconsin.* [Takes up a description of the fields, methods of prospecting for, its genesis, value as a fuel and for gas producers].—Wis. Geol. Surv. Bull. XLV; pp 274*.

Lyman, A. H.—*By-Product Coal Gas Producers.* [A paper read at a meeting of the A. S. M. E. on the recovery of by-products from gas-producers].—I. Tr. Rev. Dec. 9 1915; p 1123; pp 8*; 25c.

Mills, H. M.—*Gas Producers at Collieries for Obtaining Power and By-Products from Unsalable Fuel.* [From a paper read before the Institutnon of Mining Engineers, London].—Coll'y Guard. Sept. 24 1915; p 617; pp 1⅓*; Oct. 1 1915; p 669; pp 3*; 70c.

Offerhaus, C.—*Gas-Fired Reverberatory Furnace at Sulitjelma, Norway.* [The Elmore vacuum oil-flotation process is here used on copper sulphide ores and the furnaces are gas fired].—E. & M. J. Dec. 25 1915; p 1033; pp 4½*; 25c.

Poter, J. J.; Whetzel, J. C.—*Operation of Gas Producers for Lime Burning.*—Lime Mfg. Assn. Aug. 1915; pp 6; 35c.

——— *New Design of Morgan Gas Producer.* [Gas making fire is not disturbed and special provision is made for spreading and feeding the coal].—Iron Tr. Rev. July 2 1915; p 181; pp 3*; 25c.

——— *The Mansfield System of Oil Gas Producing.* [Method of manufacture, cost and other data].—Petro. World Dec. 1915; p 600; pp 2¼*; 35c.

——— *The Morgan Gas Producer.* [An American producer handling 3000 lbs. of

coal per hour with no hand labor].—I. & C. Tr. Rev. Nov. 5 1915; p 573; pp ½*; 35c.

MISCELLANEOUS POWER AND MACHINERY

Brinley, C. C.—*The Mechanical Handling of Coal and Ashes.*—Engg. Mag. Oct. 1915; p 65; pp 13*; 35c.

Burley, G. W.—*Lathes: Their Construction and Operation.*—Van Nostrand, pp 228*; $1.25.

Coleman, F. C.—*Interesting Improvement Scheme at an Important Group of Collieries in Northumberland, England.* [A new coke-oven and byproduct installation with exhaust steam turbine plant].—Coll'y Guard. July 2 1915; p 13; pp 3⅓*; 35c.

Cunningham, E. A.—*U-Tube Carbon Dioxide Indicator.* [For use in obtaining a continuous chart showing carbon dioxide in fuel gases].—Iron Age Oct. 14 1915; p 870; pp 2*; 30c.

Degenhardt, W. R.—*Wood-Gas Plants for Mines.* [In Australia wood is used in gas producers and the product used in combustion engines].—Mg. Mag. Oct. 1915; p 203; pp 4*; 60c.

Edmands, H. R.—*Wood Fuel for Assaying.* [Describes a furnace adapted to the use of wood fuel and gives details of operation].—Jnl. Chamber of Mines Aust. May 31 1915; p 92; pp 3*; 80c.

Edwards, Geo. E.—*Incomplete Tool Equipment—What It Costs.*—Mg. World Oct. 9 1915; p 566; pp ½; 10c.

Furman, F. D.—*Valves and Valve-Gears.* [Confined to those in use on steam engines].—J. Wiley & Son; pp 246*; $2.50.

Gilbert, L. D.—*Southwestern Portland Cement Co., Texas.* [The plant and quarry whose operations are described are located at El Paso, Texas].—Mg. & Oil Bull. Oct. 1915; p 265; pp 6½*; 25c.

Hauger, L. G.—*Practical Economy at Coal Mines.* [Treats for the most part on the up-keep of machinery and haulage systems].—Coll'y Eng. Oct. 1915; p 128; pp 3; 35c.

Hawley, R. S.—*The Cost of Power in Isolated Plants.* [Gives formulæ and curves for the estimation of].—Colo. School of Mines Qtly. Oct. 1915; p 42; pp 4*; 35c.

Hubbard, C. L.—*Ordinary Wastes in the Power Plant.* [A treatise on the mechanical efficiency of steam power plants].—Engg. Mag. Sept. 1915; p 809; pp 9*; 35c.

Hyde, M. L.—*Modern Mine-Plant Design—I.* [An arrangement which is a decided departure from American practice, but which has many advantages].—Coal Age Nov. 6 1915; p 741; pp 5*; 20c.

Hyde, M. L.—*Modern Mine-Plant Design—II.* [Deals with surface equipment as power, hoists, powder house, etc.].—Coal Age Nov. 13 1915; p 790; pp 4½*; 20c.

McGrath, J. W.—*Water Powers of Labrador.* [Describes the natural falls in this district, which has scarcely been scratched].—Canadian Mg. Jnl. Oct. 15 1915; p 635; pp 1; 35c.

Mills, M. H.—*Gas Producers at Collieries for Obtaining Power and By-Products from Unsalable Fuel.* [Abst. from a paper read before the Institution of Mining Engineers].—Coll'y Guard. Oct. 1 1915; p 669; pp 3*; 35c.

Pearl, H. I.; Green Joe.—*Electrical Plant of the Wakefield Iron Co., Mich.* [Supplies 2 shafts. Turbo-generators provided with overload device to take up peak loads].—E. & M. J. Aug. 28 1915; p 349; pp 2¾*; 25c.

Smallwood, J. C.—*How to Use Power-Plant Recorders.* [The construction and operation of vacuum and pressure gages, and temperature, time and speed recorders with their application].—Engg. Mag. Nov. 1915; p 262; pp 14*; Dec. 1915; p 382; pp 8; 70c.

Suplee, H. H.—*Mechanical Engineer's Reference Book.* [The usual formulae, etc., in handbooks].—J. B. Lippincott; pp 919; $5.

Swain, G. F.—*Conservation of Water by Storage.* [A general review of the use of water for power purposes, being a series of lectures delivered at the Sheffield Scientific School].—Yale Univ. Press; pp 369*; $3.

Tenney, E. H.—*Test Methods for Steam Power Plants.* [A reference book for power station engineers, superintendents and chemists].—Van Nostrand; pp 224*; $2.50.

——— *Association of Mining and Electrical Engineers, England.* [The midland branch, at which a paper, "The Use and Abuse of Oils in Mining Plant," was read].—I. & C. Tr. Rev. Nov. 12 1915; p 599; pp 1; 35c.

——— *Combination Steam and Water Plant.* [A small hydro-electric plant in combination with a steam power plant].—Pract. Eng. Nov. 15 1915; p 1033; pp 3½*; 20c.

——— *Methods Used in Building the*

Rogers Pass Tunnel. [On the driving, drilling, power, etc., on a tunnel located in the Rockies of B. C.].—Engg. News Nov. 11 1915; p 920; pp 3¾*; 25c.

——— *Relation of Mechanical Stokers to the Fuel Problem.* [The advantages and troubles in the use of mechanical stokers].—C. Tr. Bull. Oct. 1 1915; p 56; pp 2½; 25c.

——— *The Rossiter, Pa., Power Plant.* [Gives a complete description of the power plant which supplies electric power. Electricity is used almost exclusively underground at the mine].—Colly. Eng. July 1915; p 633; pp 4*; 30c.

——— *Transactions of the American Institute of Chemical Engineers.* [A compilation of various papers read at their meetings].—Van Nostrand; pp 268*; $3.

PART IV.

MISCELLANEOUS.*

CHAPTER XX.

MISCELLANEOUS COSTS

Adsit, C. G.; Hammond, W. P.—*Construction Elements of the Tallulah Falls Development, Georgia.* [This hydroelectric plant is operated under one of the greatest heads in the world. Costs are given].—A. I. E. E. Bull. Oct. 1915; p 2497; pp 50*; 35c.

Aikens, Warren.—*Electric Power for Montana Mines, Mills and Smelters.* [Gives details on the construction of and operation of the hydro-electric plants in the Butte district, Montana].—Mg. World July 17 1915; p 91; pp 6*; 10c.

Austin, W. L.—*Leaching Copper Ore.* [With various original suggestions the article is a general review of the subject].—M. & S. P. Aug. 7 1915; p 199; pp 2; 20c.

Arnold, H. F. W.—*Cost of Motor Versus Horse Haulage.* [An investigation of the costs of handling material with a motor truck as compared with using a 2-horse truck].—Engg. Mag. Oct. 1915; p 28; pp 5; 35c.

Baker, J. A.—*Building the Tough-Oakes Mill.* [A 100-ton cyanide plant in Ontario in which a complete record of costs is had and mill construction].—E. & M. J. Nov. 27 1915; p 869; pp 5*; Dec. 4 1915; p 915; pp 4*; 50c.

Balliet, Letson. *The Cost of Hiring and Firing Miners.* [The trouble, delay and loss due to the labor question of impermanent labor is here taken up and it is shown absolutely that money is wasted by not making help satisfied so as to retain them].—Mg. World July 10 1915; p 55; pp 2; 10c.

Barbour, Percy E.—*The Cost of an Ounce of Gold.* [The fact that the cost of a pound of copper is always given has led to this article, in which the costs for producing an ounce of gold are given for mines in all parts of the world. The quantity per ton of ore is also given with the production and the various mines are then discussed collectively].—E. & M. J. July 10 1915; p 49; pp 1½; 25c.

Beckman, J. W.—*The Electro-Chemical Possibilities of the Pacific Coast.* [A paper read before the American Electro-Chemical Soc., telling of the raw materials to be had, the power available, and various costs].—Chem. Eng. Oct. 1915; p 136; pp 4½; 35c.

Brinley, C. C.—*Reducing Costs with Mechanical Stokers.* [Shows where a saving can be had in both labor and fuel bill, besides describing some kinds of stokers and grates].—Engg. Mag. Nov. 1915; p 276; pp 17*; 35c.

Brunton, Fred K.—*The British Columbia Co.'s Smelter, Greenwood, B. C.* [The entire operations of the smelter are described, including costs, furnace charges, etc., in detail. The methods are naturally efficient, as the company worked with a profit one of the lowest grade orebodies in America].—A. I. M. E. July 1915; p 1401; pp 17*; 35c. Canadian Mg. Jnl. July 15 1915; p 440; pp 3½; 35c.

Burrows, R. P.—*Illumination of Mines.* [Has to do with electric illumination and gives some information on costs].—A. I. M. E. Bull. Nov. 1915; p 2237; pp 9*; 35c.

Copeland, D.; Hollister, S. E.—*Tin-Ore Dressing at Llallagua, Bolivia.* [Discusses the grade of tin made, gives a method for its assay, power used in concentrating and various costs].—E. & M. J. Oct. 2 1915; p 555; pp 4*; 25c.

Cornell, Sidney.—*The Open Hearth Versus the Electric Furnace in the Manufacture of Commercial Steels.* [Deals with costs of construction and production of the finished product].—Met. & Chem. Engg. Sept. 15 1915; p 630; pp 1½; 30c.

Dorsey, A. L.; Keeney, R. M.—*Electric Production of Pig Iron or Steel.* [Factors influencing its success in this country and costs of operation].—Iron Age Aug. 12 1915; p 360; pp 2¾; 30c.

Edwards, Geo. E.—*Incomplete Tool Equipment—What It Costs.*—Mg. World Oct. 9 1915; p 566; pp ½; 10c.

Fisk, G.—*How to Select Your Prime Mover.* [Hints on figuring cost of power

*Includes Miscellaneous Costs; Testing; Waste Disposition; Metallography; Law, Legislation and Taxation; Conservation; Government Ownership; Historical; Financial and Business Organization; Educational; Schools and Societies; General Miscellany.

in the use of steam turbines, gas and Diesel engines].—I. Tr. Rev. Sept. 23 1915; p 569; pp 4*; 25c.

Grady, W. H.—*Cost Factors in Coal Production.* [Efficient methods of operation and mining are taken up in detail with costs for various methods of mining].—I. & C. Tr. Rev. Aug. 20, 1915; p 219; pp 4⅓*; 35c.

Grammer, F. L.—*Heating as a Phase of Ore Treatment.* [Discusses the heat treatment of ores and shows how cost can be cut in transporting them for some distance].—Canadian Mg. Jnl. Oct. 15 1915; p 629; pp 1¾; 35c.

Hall, H. H.—*The Water Supply for the Klondike Hydraulic Mines, Alaska.* [The cost of constructing flumes and pipe lines for carrying water to the scene of operations].—M. & S. P. Aug. 28 1915; p 321; pp 3*; 20c.

Hauer, D. J.—*Economics of Contracting.* [Cost-keeping and estimating].—E. H. Baumgartner, Chicago; pp 334*; $2.50.

Hawley, R. S.—*The Cost of Power in Isolated Plants.* [Gives formulæ and curves for the estimation of].—Colo. School of Mines Qtly. Oct. 1915; p 42; pp 4*; 35c.

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Howard, L. O.—*Mining in Utah.* [Discusses the metal situation in Utah on account of the flurry in the market. Many good points are brought to light regarding the mining and smelting industry of the state].—M. & S. P. July 3 1915; p 15; pp 2; 20c.

Humes, J.—*The Silver Hill Underground Hoisting Station, Utah.* [An electrically operated system at the Silver King Coalition property in Utah].—E. & M. J. Nov. 6 1915; p 747; pp 4¾*; 25c.

Larson, C. L.—*The Holt-Dern Process.* [Consists of chlorinized roasting of copper ores, mostly in Utah and vicinity].—Mexican Mg. Jnl. May 1915; p 165; pp 3*; 35c.

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Lincoln, F. C.—*The Potosi Tin Mining District, Bolivia.* [Reviews the people, geography and geology, mining, milling and smelting, with costs and description of the operations.]—M. & S. P. July 24 1915; p 127; pp 3*; 20c.

Lombardi, M. E.—*The Cost of Maintaining Production in California Oil Fields.* [The things considered are the cost of prospecting for new wells and the decrease in supply from the old wells].—A. I. M. E. Bull. Sept. 1915; p 2109; pp 6*; 35c. West. Engg. Nov. 1915; p 212; pp 2½*; 35c.

Low, S. V. F.—*An Example of Low Working Costs.* [A brief regarding the operation under consideration is given and supplemented with information on the cost of the operation].—Aust. Inst. M. E. No. 18, 1915; p 59; pp 8*; 60c.

Meinzer, O. E.—*Ground Water in Big Smoky Valley, Nevada.* [An account of available water to be had with costs for pumping and obtaining the same].—U. S. G. S. Water-Supply Paper 375-D; pp 32*.

Muntz, G.—*Finding Costs in the Steel Foundry.* [A method for determining selling prices and general operation costs].—I. Tr. Rev. Sept. 9 1915; p 482; pp 2½; 25c.

Norton, T. H.—*Potash from the Pacific Coast Kelp.* [From the Dept. of Agriculture, giving figures on cost, value, imports and production].—Mg. World Sept. 4 1915; p 372; pp 2½; 10c.

Palmer, L. A.—*A Novel Debris Dam.* [A dam built in California from placer mining debris. Considerable information is also given regarding the placer operations and costs in the state].—M. & S. P. July 10 1915; p 43; pp 4*; 20c.

Parker, E. W.—*Fuel Briquetting Industry in the United States.* [Abst. from Mineral Resources of U. S., 1914, showing the production and costs of briquetting coal residue].—Mg. World July 17 1915; p 103; pp 1½; 10c.

Read, Thomas T.—*The Engels Mine and Mill.* [Reviews the camp in general, giving a description of the formation, the mines, costs and mill where no other process than flotation is used].—M. & S. P. July 31, 1915; p 167; pp 5*; 20c.

Reynolds, H. B.—*Wood and Coal as Fuel for Steam Boilers.* [A number of tests showing the results obtained by burning both kinds of fuel, and costs in several cases].—Sibley Jnl. Engg. Oct. 1915; p 14; pp 6*; 30c.

Rindsfoos, C. S.—*Purchasing.* [A complete treatise on methods of buying and systems for accounting for stock, etc.].—McGraw-Hill Co.; pp 165*; book, $2.

Snyder, F. T.—*The Cost of Electric Furnace Steel.* [On the design of the furnace, operating costs and operation].—Iron Age Oct. 21 1915; p 926; pp 2*; 30c.

Stansfield, A.—*Electric Furnace Steel in Canada.* [A paper read before the Montreal Met. Assn.].—Canadian Mg. Inst. Bull. Nov. 1915; p 849; pp 7*; 35c.

Streeter, R. L.—*Internal Combustion Engines.* [A general text on the subject, including the use of fuels and a comparison of costs].—McGraw-Hill; pp 409*; $4.

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——— *A Serviceable Coal Chart.* [A description and reproduction of the chart accepted by the National District Heating Assn. from which the cost of steam with a given grade of coal under various conditions can be readily obtained].—E. & M. J. Oct. 16 1915; p 636; pp 1¾*; 25c.

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——— *Electro-Metallurgy of Aluminum in the West.* [Bauxite is the mineral from which the metal is extracted by electrolysis. Costs of material and operations are also given here].—Mg. World Aug. 7 1915; p 219; pp 2½; 10c.

——— *International Movement of Fertilizers.* [Takes up the production, exports and imports with prices of sulphur, potash and other fertilizing materials].—International Inst. of Agric. Sept. 1915; pp 36.

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——— *Mining on the Witwatersrand.* [General review of the conditions, with cost and production figures].—E. & M. J. Aug. 21 1915; p 320; pp 2½*; 25c.

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——— *What Some of the Leading Coppers Are Doing.* [Reviews the North Butte, Nevada Con., Utah and Chino Copper Cos.].—Mg. World Aug. 14 1915; p 259.

——— *Yorkshire Main Colliery.* [The surface equipment, including sorting and power plant structures].—I. & C. Tr. Rev. July 2 1915; p 1; pp 2½*; 35c.

TESTING

Ores, Metals, Etc.

Addicks, Lawrence. — *Roasting and Leaching Concentrator Slimes Tailings.* [From the A. I. M. E. on tests made by the author at Douglas, Ariz., accompanied with curves showing results. The roasting procedure is also taken up].—Met. & Chem. Engg. Sept. 1 1915; p 4½*; 30c.

Beecher, M. F.—*An Investigation of Iowa Fire Clays.* [A number of tests have been made regarding the impurities, vitrification, refractory properties, disintegration from heat, etc.].—Iowa College Bull. 40; pp 117*.

Bertsch, A.; Getzner, A.—*Untersuchungen über die Salzsysteme ozeanischer Salzablagerungen.* [Is experimental work for the distillation of salt from sea waters].—Kali June 15 1915; p 177; pp7*; Aug. 15 1915; p 245; pp 5½*; Sept. 1 1915; p 261; pp 9½*; $1.05.

Bondolfi, F.—*Esame Degli Oli Leggeri di Catrame e dei Benzeni Commerciali.* [Gives practical methods for analyzing and testing petroleum for its commercial by-products].—Metallurgia Ital. Oct. 30 1915; p 615; pp 18; $1.

Bonnet, E. H.—*Simple Cement Testing.* [Tells of tests which can be made with the thumb-nail and the other with a pailful of water and give satisfactory results].—Coal Age Oct. 30 1915; p 709; pp 1¼; 20c.

Burgess, G. K.; Sale, P. D.—*A Study of the Quality of Platinum Ware.* [Tests for the purity and losses due to heating, etc., in chemical and electrical laboratory work are here explained].—U. S. Bur. of Stand. Sci. Paper 254; pp 28*.

Burrell, G. A.; Boyd, H. T.—*Inflammability of Mixtures of Gasoline Vapor and Air.* [Describes tests which have been made].—U. S. Bur. of Mines Tech. Paper 115; pp 18*.

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Chapman, C. M.; Johnson, N. C.—*The Economic Side of Sand Testing.* [How by testing a saving may be instituted and a better concrete made].—Sibley Jnl. of Engg. Nov. 1915; p 65; pp 6½*; 30c.

Chapman, C. M.; Johnson, N. C.—*Safe Concrete Demands Knowledge of Sands.* [The relation of the sand to the concrete is here discussed].—Sibley Jnl. of Engg. Dec. 1915; p 105; pp 6*; 30c.

Corse, W. M.—*Uses of Aluminum Bronze Alloys.* [A paper read before the A. I. of M.].—I. Tr. Rev. Dec. 9 1915; p 1137; pp 2*; 25c.

Crook, W. J.—*The Testing of Ores for the Cyanide Process.* [A means by which the best cyanide treatment for ores can be previously ascertained by analysis].—Chem. Eng. July 1915; p 31; pp 2½; 35c.

Emley, W. E.—*Measurement of the Plasticity of Hydrated Lime by the Compression Method.*—National Lime Mfg. Asso. Bull. 19; pp 5.

Evans, G. S.—*Testing the Hardness of Iron Castings.* [A method of determining the hardness of chilled and gray iron castings by use of a ball impression. Also the relation of hardness to the strength and properties of the castings].—Iron Age July 1 1915; p 8; pp 2½*; 30c.

Forbes, C. R.; Cummings, L. M.—*Comparative Tests of Piston-Drill Bits.* [All tests were made with one drill, but with various kinds of bits. The results are all plotted into separate curves].—Mo. School of Mines Bull. Aug. 1915; pp 40*; 50c.

French, H. J.—*Flotation Tests on Ores from Bisbee and Cobalt.* [Treats on experimental work done on the ores at the Columbia School of Mines].—Columbia School of Mines Qtly. Nov. 1914; p 56; pp 10; 65c.

French, Herbert J.—*Flotation Tests on Cobalt Silver Ores.* [Gives the results of various tests made with different ores and oils].—Canadian Mg. Jnl. July 1 1915; p 400; pp 1½; 35c.

Gates, A. O.—*Kick vs. Rittinger: An Experimental Investigation in Rock Crushing Performed at Purdue University.* [Many of the results have been plotted into curves. The main object of the experiments was to see whether the work expended was proportional to the reduction in the diameter or the volume].—A. I. M. E. Bull. Sept. 1915; p 2023; pp 33*; 35c.

Haanel, B. F.; Blizard, John.—*Results of the Investigation of Six Lignite Samples Obtained from the Province of Alberta, Canada.* [Both the apparatus and method of procedure are described and considerable of the results are plotted into curves.]—Canada Mines Branch 331; pp 110*.

Haldane, J. S.—*The New Coal-Dust Experiments.* [A reprint of the seventh report of the Explosions in Mines Committee, also dealing with the effect of the dust on the laborer].—I. & C. Tr. Rev. Dec. 10 1915; p 709; pp 3; 35c; Coll'y Guard. Dec. 10 1915; p 1181 pp 3⅔; 35c.

Hartmann, M. L.—*A Reduction Test for Tungsten.* [Abst. from the Colorado School of Mines Quarterly].—Mg. World Dec. 25 1915; p 1021; pp 1¼; 10c.

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Jeffries, Z.; Kline, A. H.; Zimmer, E. B.—*The Determination of Grain Size in Metals.* [An account of tests and how the size of the composing grains effect the properties].—A. I. M. E. Bull. Dec. 1915; p 2359; pp 12*; 35c.

Jonson, Ernest.—*Fatigue of Copper Alloys.* [Paper read before the American

Soc. for Testing Materials.]—Chem. Eng. Aug. 1915; p 55; pp 2½; 35c.

Kalmus, H. T.—*Electro-Plating with Cobalt.* [A number of tests run with cobalt and its alloys at Queens Univ., Canada].—Canada Dept. of Mines No. 334; pp 89*.

Kotze, R. N.—*Radio-Active Minerals in South Africa.* [A discussion on W. A. Rogers' paper read before the Geological Soc. of S. Afr.].—S. Afr. Mg. Jnl. July 10 1915; p 451; pp 1; 35c.

Leeds, M. E.—*Neglected Phenomena in Steel Treatment.* [Paper read at the eighteenth meeting of the American Society for Testing Materials. Discusses a new way to tell when steel has been heated through its transformation point and gives the temperature relation of the furnace and the steel's surface and interior].—Iron Age July 8 1915; p 80; pp 2*; 30c.

Lesher, C. E.—*Field Apparatus for Determining Ash in Coal.* [Describes the apparatus and its operation].—U. S. G. S. Bull. 621-A; pp 12*.

Mann, A. S.—*Some Problems in Burning Powdered Coal.* [From the G. E. Rev., giving results of experimental work in the practical use of the fuel].—Iron Age Sept. 16 1915; p 632; pp 2½*; 30c.

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Muir, D. D.—*Sampling Low-Grade Ore on a Large Scale.* [Tests made on a $15 gold ore, Ebner mine, Juneau, Alaska, in investigating a sand and concentration method].—M. & S. P. Nov. 13 1915; p 737; pp 4¾*; 20c.

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Redwood, B.; Eastlake, A. W.—*Petroleum Technologists' Pocket Book.* [Has maps and methods for drilling, prospecting, testing, etc.].—J. B. Lippincott Co.; pp 454*; $3.

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Rickard, T. A.—*Grass Valley Re-Visited.* [Takes up various points of interest regarding the methods of mining peculiar to the district, together with costs and production. A good explanation is given of a machine for testing the efficiency of air drills].—M. & S. P. July 3 1915; p 11; pp 3½*; 20c.

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Seaver, K.—*Manufacture and Tests of Silica Brick for the By-Product Coke Oven.* [Takes up several kinds of material used, the method of manufacture and testing the finished product and raw material].—A. I. M. E. Bull. Sept. 1915; p 1913; pp 14½*; 35c. C. Tr. Bull. Oct. 15 1915; p 28; pp 6½; 25c. Met. & Chem. Engg. Nov. 15 1915; p 861; pp 5; 25c.

Sim, J.—*Laboratory Work for Coal Mining Students.* [Brings out up-to-date methods for sampling and analyzing coal].—E. Arnold, London; pp 136; 90c.

Skillman, V.—*Brinell Hardness Testing of Nonferrous Alloys.* [Paper presented at the Am. Fdys. Assn.].—Chem. Eng. Aug. 1915; p 57; pp 2; 35c.

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Uhler, J. L.—*Dynamic Qualities of Cast Steel.* [Showing the apparatus by which it is tested].—Foundry Oct. 1915; p 417; pp 2½*; 35c.

Vickers, C.—*How Titanium-Aluminum-Bronze Is Produced.* [Shows how the alloy is compounded, melted and cast, with details as to its constituents. Description is also given of the foundry departments, chemical and testing laboratories].—Foundry July 1915; p 273; pp 5½*; 25c.

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——— *Desulphurization in Cupola Practice.* [A series of German experiments to determine means for removing sulphur by using chemicals and changes in operation].—Iron Age Aug. 26 1915; p 468; pp 2; 30c.

——— *Experiments with Coal Dust at the Derne Gallery.* [Translated from the German, Glückauf].—Coll'y Guard. Oct. 29 1915; p 874; pp 1; 35c.

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Bjerregaard, A. P.—*Studies on the Pressure Distillation of Petroleum Hydrocarbons.* [Is the results of experiments conducted for the purpose of finding a safe process for the distillation of commercial naphtha, gasoline and other light hydrocarbons. The apparatus used in the experiments is also described in detail].—Jnl. Ind. & Eng. Chem. July 1915; p 573; pp 4½*; 60c.

Bleininger, C. S.; Kinnison, C. S.—*The Viscosity of Porcelain Bodies High in Feldspar.* [A number of tests revealing that the molten material is made more fluid with a higher content of feldspar].—U. S. Bur. of Stand. Tech. Paper 50; pp 7*.

Burman, B. F.—*Efficiency of the Blast Furnace Operation.* [Tabulated data is given and considerable theory is propounded on the operation of the blast, the chemical part being left out].—Met. & Chem. Engg. Sept. 15 1915; p 524; pp 5; 30c.

Carpenter, J. A.—*Slime Agitation and Solution Replacement Methods at the West End Mill, Tonopah, Nev.* [Trent system, continuous decantation and replacement are in practice here. Abst. from a paper read before the A. I. M. E.].—Met. & Chem. Engg. Oct. 1, 1915; p 671; pp 5*; 30c.

Clark, Allan J.—*Notes on Homestake Metallurgy.* [Reviews the practice in detail, from the crushing and classifying of the ore to the smelting of the zinc precipitate. Costs, together with detailed information regarding consumption and time with curves will also be found].—A. I. M. E. July 1915; p 1381; pp 20*; 35c.

Clennell, J. E.—*Concentration Formulae.* [A number of formulae for use in running concentration tests, but of little use in practice].—E. & M. J. Oct. 30 1915; p 724; pp 1; 25c.

Collins, H. F.—*Concentration of Gold in Bottoms in the Converter.* [Abst. from a paper read before the Inst. of M. and Met., London. Contains tables of results and description of tests].—M. & S. P. July 24 1915; p 132; pp 3; 20c.

Davis, P. B.; Putnam, W. S.; Jones, H. C.—*The Conductivity and Viscosity of Solutions of Electrolytes in Formamid.* [Experimental work with both aqueous and non-aqueous solutions].—Jnl. Frank. Inst. Nov. 1915; p 567; pp 36*; 60c.

Diehl, A. N.—*Progress in Blast Furnace Practice.* [Is an added discussion on a previous paper on improvements of benefit to the blast furnace in the smelting of iron ore. Tables are given regarding tests etc.].—Iron Tr. Rev. July 1 1915; p 28; pp 2½; 25c.

Diehl, A. N.—*Utilization of Blast Furnace Gas.* [An account of methods used for burning the gas in stoves and boilers with tests made on the same].—I. Tr. Rev. Oct. 28 1915; p 835; pp 3½; 25c.

Dittus, E. J.—*The Effect of High Ignition-Voltages on the Accuracy of Bomb Calorimeter Determinations.* — Met. & Chem. Engg. Aug. 1915; p 480; pp 1½*; 30c.

Dougill, G.; Hodsman, H. J.; Cobb, J. W.—*Thermal Conductivity of Refractory Materials.* [Abst. of a paper read before the Yorkshire section of the Society of Chemical Industry. Has a detests were made with some discussion of scription of the methods in which the the topic and a table giving the results of the experiments].—I. & C. Tr. Rev. June 25 1915; p 889; pp 1 2-3*; 35c.

Du Rell, C. T.—*Liquid Jets.* [A study of phenomenon of importance in cyanidation and flotation].—Met. & Chem. Engg. Oct. 15 1915; pp 714; pp 2¼; 30c.

Franklin, E. C.; Holmes, J. A.; Gould, R. A.—*Report of the Selby Smelter Commission.* [An investigation into the smelter smoke problem to increase the efficiency and lessen the waste and to lessen

its ill effects on the farming of the community. Sulphides were smelted containing lead, silver, gold].—U. S. Bur. of Mines Bull. 98; pp 528*; $1.25.

Hebbard, James.—*Flotation at the Central Mine, Broken Hill, New South Wales.* [Details on the operation, construction and tests made at the mine].—M. & S. P. Sept. 4 1915; p 347; pp 6½*; 20c.

Herz, Nathaniel.—*Zinc-Dust Precipitation Tests.* [A paper read before the A. I. M. E.]—Mg. Sci. Aug. 1915; p 34; pp 4; 35c. Mg. World Nov. 13 1915; p 769; pp 2¾; 10c.

Johnson, J. E., Jr.—*Blast Furnace Plant Auxiliaries and General Arrangement.* [Has to do with the arrangement and discussion of drying the air for the blast by both refrigeration and heating].—Met. & Chem. Eng. July 1915; p 429; pp 9*; 50c.

Johnson, J. E., Jr.—*Thermal Principles of the Blast Furnace.* [A general discussion of the furnace and results of heating and drying the blast].—Met. & Chem. Engg. Oct. 15 1915; p 718; pp 3*; 30c.

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Lathe, Frank E.—*Metal Loss in Copper Slags—I.* [The most important literature is here dwelt on and curves are shown giving the copper loss under various conditions].—E. & M. J. Aug. 7 1915; p 215; pp 3; 25c.

Lathe, F. E.—*Metal Losses in Copper Slags—II.* [Laboratory investigations and furnace observations at the Granby smelter, B. C.].—E. & M. J. Aug. 14 1915; p 263; pp 6*; Aug. 21, 1915; p 305; pp 3; 50c.

Maccoun, A. E.—*The Trend of Blast Furnace Improvements.* [A paper read before the A. I. S. I. covering blast furnace and hot stove tests and suggestions as to improvements that might be made].—Iron Age Sept. 16 1915; p 624; pp 3*; 30c.

Peters, Franz.—*Neurungen in der Elektrometallurgie des Kupfers.* [Describes tests and operations in late electrolytic practice of refining copper].—Glückauf Aug. 14 1915; p 797; pp 7; Aug. 28 1915; p 845; pp 7; $1.

Rickard, T. A.—*Charles Butters and the New Metallurgy.* [An interview had by T. A. Rickard with C. Butters in which results of some of Mr. Butters' flotation tests are given].—M. & S. P. Aug. 21 1915; p 273; pp 6½*; 20c.

Robertson, G. A.—*The Dumb-Bell Tube Mill.* [A new mill in which dumb-bell rollers instead of pebbles are used].—S. Afr. Mg. Jnl. Nov. 13, 1915; p 244; pp 1¼; 35c.

Smith, Ralph W.—*Flotation Testing Machine.* [A miniature for complete flotation tests on any kind of ore].—E. & M. J. Sept. 4, 1915; p 395; pp 2*; 25c.

Spaulding, C. F.—*Experimental Cyanide Plant of the Michigan College of Mines.*—Mg. World Nov. 20 1915; p 809; pp 1¾*; 10c.

Stevens, T. B.—*The Metallurgy of the Sons of Gwalia Mine Ore, Australia.* [Gold ore with pyrite is treated by cyanide and amalgamation].—Jnl. West. Aust. Chamber of Mines Sept. 30 1915; p 211; pp 12*; 50c.

Taggart, Arthur F.—*Hardinge Mill Data.* [In a brief tabulated form the results of grinding are given for various plants. Details of conditions and material handled are given with the feed and discharge percentage. The results of these cards are assembled on one form at the end].—A. I. M. E. July 1915; p 1365; pp 12; 35c.

Weitlaner, R. J.—*Furnace Curves.* [Describes a number of curves and illustrates the same. The main object of this is to allow a comparison of fuels and furnaces and work the latter on a bonus system].—Met. & Chem. Eng. July 1915; p 425; pp 3½*; 30c.

Wells, R. C.—*The Fractional Precipitation of Some Ore-Forming Compounds at Moderate Temperatures.* [A number of experiments to show the disposition of minerals from solution].—U. S. G. S. Bull. 609; pp 46*.

White, H. A.—*The Theory of Tube Milling.* [Is a detailed article on the operation and tests made on tube mills. Results in tabulated form and description are given which are obtained from both experience and the laboratory].—Canadian Mg. Jnl. July 1 1915; p 396; pp 4; 35c.

Wysor, R. J.—*Measurement of the Temperature Drop in the Blast-Furnace Hot-Blast Mains.* [Describes tests and shows curves giving the drop in temperature when the air flows from the hot-blast stove to the furnace].—A. I. M. E. Bull. Oct. 1915; p 2161; pp 10*; 35c. I. & C. Tr. Rev. Oct. 29 1915; p 537; pp 1*; 35c.

——— *Flotation in a Mexican Mill.*

[Details on the method of operation with extraction and cost figures and information on tests made].—M. & S. P. July 24 1915; p 122; pp 5*; 20c.

——— *Testing Working Cyanide Solutions.* [From the Jnl. of the Chemical, Met. and M. Soc. of So. Africa].—M. & S. P. July 24 1915; p 136; pp 1; 20c.

Power and Machinery

Bacon, C. J.—*How to Utilize Waste Heat in Boilers.* [In a foundry this system is saving 250 lbs. of coal per ton of ingots].—I. Tr. Rev. Dec. 23 1915; p 1225; pp 6*; 25c.

Bull, R. A.—*Atomizing Fuel Oil.* [Abst. of a paper read before the American Foundrymen's Assn. in which tests show that superheated steam is better than air in open-hearth furnace work].—Iron Age Nov. 4, 1915; p 1049; pp 1½*; 30c. Foundry Oct. 1915; p 424; pp 3*; 35c.

Burgess, G. K.; Merica, P. D.—*An Investigation of Fusible Tin Boiler Plugs.* —U. S. Bur. of Stand. Tech. Paper No. 53; pp 37*.

Dalby, W. E.—*Steam Power.* [The first chapter is elementary to help the steam laboratory student after which a complete yet clear and concise description of steam power plants follows].—Arnold, London; pp 760*; $6.

Elwood, W. F.—*The Efficiency of Coal Tested.* [The author has made various tests on boilers in operation and not an analysis of the coal in the laboratory. This latter as an idea of standardizing coal, and obtaining systematic efficiency, he disapproves, as technical data is put in the hands of those who do not understand it, and this is worse than no knowledge at all].—Coal Tr. Bull. July 1 1915; p 43; pp 3½; 25c.

Fieldner, A. C.; Feild, A. L.—*A New Method and Furnace for the Determination of the Softening Temperature of Coal Ash Under Fuel-Bed Conditions.* [The furnace is of a laboratory type].—Jnl. Industrial & Chem. Engg. Oct. 1915; p 829; pp 5½*; 60c.

Kratz, A. P.—*A Study of Boiler Losses.* [Curves and tests on the study; from Univ. of Ill. Bull.].—Practical Eng. Sept. 1 1915; p 820; pp 4½*; 20c.

Legrand, Chas.—*Mine Pumping.* [A paper read at the San Francisco meeting of the A. I. M. E. on steam and electric pumps, air lifts, and tests on the same]. —Canadian Mg. Jnl. Oct. 1 1915; p 599; pp 3; 35c. C. Tr. Bull. Oct. 15 1915; p 43; pp 3½; 25c.

Legrand, Chas.—*Tests on Various Steam and Electrically Operated Pumps.* [The tests were made at the Old Dominion Copper property].—Mg. World Oct. 23 1915; p 652; pp 1; 10c.

Mavor, Sam.—*Compressed Air for Coal Cutters.* [A paper read before the Institute of Mining Engineers, England]. —Sci. & Art of Mg. Oct. 23 1915; p 126; pp½; 35c.

McDonald, J. A.—*Testing Surveyors' Tapes by the Canadian Government.* [Details on the method].—Engg. News. Aug. 26 1915; p 414; pp 1½*; 25c.

McFarland, J. R.—*How to Choose a Rock Drill.* [A discussion on the buying of drills].—E. & M. J. Oct. 30 1915; p 719; pp 4½; 25c.

Meinke, Fred, Jr,—*Tests for Screen Selection.* [A description of tests run, giving the results obtained].—E. & M. J. Nov. 6 1915; p 763; pp 1; 25c.

Mooney, J. D.; Darnell, D. L.—*Chart for Conveyor Belt Calculations.* [A paper read before the International Engineering Congress. The chart combines for different materials the length of belt, drop, plies and width].—I. Tr. Rev. Dec. 23 1915; p 1231; pp 1*; 25c.

Mooney, J. D.; Darnell, E. L.—*Conveyor-Belt Calculating Chart.* [For ascertaining the number of plies necessary under specific conditions].—A. I. M. E. Bull. Sept. 1915; p 1937; pp 3*; 35c.

Pearson, J. C.; Sligh, W. H.—*An Air Analyzer for Determining the Fineness of Cement.* [A mechanical means for testing and analyzing cement].—U. S. Bur. of Stand. Tech. Paper 48; pp 74*.

Reynolds, H. B.—*Wood and Coal as Fuel for Steam Boilers.* [A number of tests showing the results obtained by burning both kinds of fuel, and costs in several cases].—Sibley Jnl. Engg. Oct. 1915; p 14; pp 6*; 30c.

Sherman, G. F. G.—*Tramming and Hoisting at Copper Queen Mine, Arizona.* [Gives details regarding efficiency tests, method of operation and costs in detail. Electric haulage is used].—A. I. M. E. Bull. Sept. 1915; p 1836; pp 51*; 35c.

Simmersbach, O.—*A Modern Foundry Pig-Iron Mixer.* [Tells of its use in a German foundry. It is operated with blast furnace and coke-oven gases.—Iron Age Oct. 7 1915; p 812; pp 2*; 30c.

Taylor, Roy.—*Color Used in Hydraulic Tests of Power Plants.* [An accurate means for determining water flow by means of injecting coloring material].—Engg. News Sept. 23 1915; p 617; pp 4*; 25c.

Tenney, E. H.—*Test Methods for Steam Power Plants.* [A reference book for power station engineers, superintendents and chemists].—Van Nostrand; pp 224*; $2.50.

Trautschold, R.—*Power-House Chimneys for Steam Sizes of Anthracite.* [Brings out points regarding the theory and practice in the use of natural drafts].—Coal Age Sept. 11 1915; p 418; pp 3½*; 20c.

Townsend, David.—*Scientific Operation of a Cupola.* [The importance of measuring materials going into the furnace, including the pressure and volume of air]. Iron Tr. Rev. July 15 1915; p 133; pp 3*; 25c.

Wilson, W. O.—*Water Indicator Diagrams.* [A number of indicator test cards taken from several different pumps].—Pract. Eng. Nov. 1 1915; p 1013; pp 1¾*; 20c.

——— *Fuel-Combustion Improvers.* [Discusses tests, etc., on various chemical and other devices for saving fuel].—Coal Age Dec. 11 1915; p 965; pp 2½*; 20c.

——— *Methods of Working and Ventilation.* [A theoretical brief on the subject].—Sci. & Art. of Mg. Aug. 28, 1915; p 25; pp 2*; 35c.

——— *The Testing of Air Compressors.* [An abstract from the same article in Engineering reviewing the subject in a somewhat theoretical way].—Comp. Air Aug. 1915; p 7689; pp 4*; 20c.

——— *The Use of Compressed Air on the Rand, South Africa.* [About 3500 drills are in use daily, the supply coming from electric compressors. The method of testing the compressors is also given].—S. Afr. Mg. Jnl. June 26 1915; p 417; pp 1½; 35c.

Miscellaneous

Baumann, D. F.—*Der Tragkraftüberschutz der Schachtförderseile.* [The variable surplus strength in hoisting ropes, accompanied with curves].—Glückauf Aug. 14 1915; p 803; pp 4*; 50c.

Burgess, G. K.; Foote, P. D.—*Characteristics of Radiation Pyrometers.*—U. S. Bur. of Stand. 12:1; p 91; pp 89*.

Burgess, G. K.; Foote, P. D.—*Characteristics of Radiation Pyrometer.* [A text on the correct methods of operation and testing with a pyrometer].—U. S. Bur. of Stand. Sci. Paper No. 250; pp 178*.

Clark, H. H.—*Permissible Explosion-Proof Electric Motors for Mines; Conditions and Requirements for Test and Approval.* [Speaks of types in which electric arcs are at a minimum].—Bureau of Mines Tech. Paper 101; pp 17*.

Dickinson, H. C.; Osborne, N. S.—*An Aneroid Calorimeter.*—U. S. Bur. of Stand. 12:1; p 23; pp 26*.

Graf, S. H.—*Universal Strainometer of Simple Design.* [The apparatus can do the work of an extensometer and compressometer].—Iron Age July 15 1915; p 134; pp 1½*; 30c.

Hackett, D. A.—*The Calibration of Anemometers.* [For measuring air quantity and velocity].—Coll'y Eng. Sept. 1915; p 66; pp 1½*; 30c.

Harris, E. G.—*Orifice Measurements of Air in Large Quantities.* [Tests run at the Missouri School of Mines to determine the flow of air through orifices up to 30 in. in diameter or square].—Mo. School of Mines Bull. Nov. 1915; pp 18*.

Howell, Spencer P.—*Permissible Explosives Tested Prior to March* 1, 1915. [Discusses and gives the uses of various kinds of explosive materials].—Bureau of Mines Tech. Paper 100; pp 16.

Hunt, R. W.—*An Investigation of Ladle Test Ingots.* [A paper read before the American R. R. Engg. Assn. showing that unsoundness makes inaccurate analysis and aluminum prevents sponginess and segregation].—Iron Age Dec. 2 1915; p 1303; pp 2½*; 30c. I. Tr. Rev. Nov. 25 1915; p 1037; pp 3*; 25c.

Lynch, T. D.—*Fixing the Elastic Limit Standard.* [The results of tests are herein given with discussion on the topic of a more closely standardized meaning of elastic limit which now has various interpretations. It also shows from tests with the extensometer that commercial tests could be considerably more accurate than at the present time].—Iron Tr. Rev. July 8 1915; p 79; pp 3*; 25c.

MacMichael, R. F.—*A New Direct-Reading Viscosimeter.* [The instrument works on the general principles of an ordinary viscosimeter].—Jnl. of Ind. & Chem. Engg. Nov. 1915; p 961; pp 2*; 60c.

Morleck, A. G.—*Calculation of Mine Gangway Timbers.* [An idea of the stresses in the timbers and methods for calculating sizes from these stresses].—Coal Age, Nov. 20 1915; p 837; pp 1¾*; 20c.

Pierce, C. H.; Davenport, R. W.—*Relation of Stream Gaging to the Science of Hydraulics.* [Some tests and a general discussion of the subject].—U. S. G. S. Water-Supply Paper 375-C; pp 8*.

Reedy, J. H.—*Anodic Potentials of Silver.* [Deals with the part they take

determining halogens electrolytically].—American Jnl. of Sci. Oct. 1915; p 400; pp 13*; 60c.

Schmerber, H.—*Experiments with Ammonium Nitrate Explosives.* [From Bull. Société de l'Industrie Minérale].—Coll'y Guard. Oct. 8 1915; p 723; pp 2*; 35c.

Whittome, Arthur C.—*The Influence of Moisture in the Air on Mine Ventilation.* [Abst. from a paper read before the S. Afr. Inst. Eng. on tests made covering the above topic].—S. Afr. Engg. July 1915; p 14; pp 2; 35c. I. & C. T. Rev. July 30 1915; p 127; pp 2⅓; 35c. Coll'y Guard, Aug. 6 1915; p 269; pp 1⅔; 35c.

Wig, R. J.; Williams, G. M.—*Investigation of the Durability of Cement Drain Tile in Alkali Soils.* [The results of a series of tests made in the field].—U. S. Bur. of Stand. Tech. Paper 44; pp 56*.

Wig, R. J.; Davis, H. A.—*Value of High-Pressure Steam Test of Portland Cement.* [Discusses the usefulness of the test].—U. S. Bur. of Stand. Tech. Paper 47; pp 34*.

——— *Fifty-Three Standards Considered by American Society for Testing Materials.* [A synopsis of the proceedings of the society is given. Also abstracted reviews from the papers read and questions discussed].—Iron Tr. Rev. July 1, 1915; p 37; pp 6; 25c.

——— *Partial Report of the Committee on Standardization of the Mining and Metallurgical Society of America.* [An attempt is made to standardize things which are written about so that a more definite idea may be had by the reader].—Bull. Canadian Mg. Inst. Sept. 1915; p 656; pp 12; 35c.

——— *Roads and Streets.* [Investigation of resistance to wear with several different materials used to make the concrete with].—Engg. & Contract. Aug. 25 1915; p 144; pp 4*; 25c.

——— *Standardizing Methods That Have Been in Effect for a Half Century.* [Terms to be adopted in writing and standards to be adopted in tests, by the M. & M. Soc. of America].—Mg. World Sept. 25 1915; p 483; pp 1; 10c.

WASTE: SLAG, TAILINGS, FUMES, ETC.

Addicks, Lawrence. — *Roasting and Leaching Concentrator Slimes Tailings.* [From the A. I. M. E. on tests made by the author at Douglas, Ariz., accompanied with curves showing results. The roasting procedure is also taken up].—Met. & Chem. Engg. Sept. 1 1915; p 4½*; 30c.

Aldrich, C. H.—*Treatment of Silver Furnace Fume by the Cottrell Process.* [A paper read to the American Electrochemical Soc. The process is one of electrical precipitation from the Doré furnace fumes].—Mg. World Dec. 11 1915; p 930; pp 2½; 10c. Chem. Eng. Oct. 1915; p 167; pp 3; 35c.

Anderson, R. P.—*The Specific Absorption of Reagents for Gas Analysis.* [The first reagent whose absorbing power is taken up in detail is that of alkaline pyrogallol, which is an extensive reagent for oxygen. A detailed description is given of the method in which it is used for analysis and the apparatus is described. Curves, etc., are given regarding its reuse after one absorption. The compounding of the chemical is also discussed].—Jnl. Ind. & Eng. Chem. July 1915; p 587; pp 9*; 60c.

Bosqui, F. L.—*Metallurgical Practice in the Witwatersrand District, South Africa.* [A paper read before the A. I. M. E.].—S. Afr. Engg. July 1915; p 5; pp 4*; Oct. 2 1915; p 107; pp 1¼; 70c.

Bradley, Linn.—*Solution of Smoke, Fume and Dust Problems by Electrical Precipitation.* [Sights several instances in which the operation is of use and gives some description of methods used].—Chem. & Met. Engg. Dec. 1 1915; p 905; pp 10; 35c.

Bretherton, S. E.—*High-Grade Slags in the Smelting of Lead Ores.* [On the use of fluxes in lead refining].—Mg. World Aug. 14 1915; p 257; pp 2; 10c.

Bretherton, S. E.—*Stop Unnecessary Waste of Metals in Mining.* [Showing that conservation of resources will soon have to be thought of with metals as with other limited products].—Mg. World Sept. 18 1915; p 437; pp 2; 10c.

Brown, E. C.—*Utilization of Blast Furnace Slag.* [A paper read before the Eng. Soc. of West Pa.].—Iron Age Dec. 23 1915; p 1476; pp 1½; 30c.

Butler, B. S.—*Potash in Certain Copper Ores and Tailings.* [Abst. from U. S. G. S. Bull. 591. The potash source referred to is feldspar contained in the gangue rock].—Mg. World Dec. 11 1915; p 935; pp 1¾; 10c.

Diehl, A. N.—*Utilization of Blast Furnace Gas.* [An account of methods used for burning the gas in stoves and boilers with tests made on the same].—I. Tr. Rev. Oct. 28 1915; p 853; pp 3½; Nov. 11 1915; p 946; pp 3; Nov. 18 1915; p 993; pp 4*; Nov. 25 1915; p 1040; pp 3*; $1.

Ellis, H. I.—*Winter Mining at Fairbanks.* [Principally surface operations].

—E. & M. J. Oct. 30 1915; p 707; pp 1½*; 25c.

Franklin, E. C.; Holmes, J. A.; Gould, R. A.—*Report of the Selby Smelter Commission.* [An investigation into the smelter smoke problem to increase the efficiency and lessen the waste and to lessen its ill effects on the farming of the community. Sulphides were smelted containing lead, silver, gold].—U. S. Bur. of Mines Bull. 98; pp 528*; $1.25.

Gerold, Oscar.—*Die Technische Bedeutung der Straubfrage für Zinkhütten.* [Describes methods used in handling dust in refining zinc].—Metall & Erz. Oct. 8 1915; p 403; pp 8*; Oct. 22 1915; p 419; pp 7½*; $1.

Hanna, W. C.—*The Fleming Dust Collecting System.* [Details on the method used for settling dust at the California Portland Cement Co.].—Jnl. of Elec. Aug. 28 1915; p 143; pp 5*; 35c.

Hanna, W. C.—*The Fleming Dust Collecting System.* [A paper read before the American Inst. of Chem. Eng., giving in detail the construction and operation of the system].—Met. & Chem. Engg. Sept. 15 1915; p 609; pp 4*; 30c.

Johnson, J. E., Jr.—*Chemical Principles of the Blast Furnace.* [Treats on the fuels used and impurities which go into the slag. A note is added on the handling of iron-titanium ores].—Met. & Chem. Engg. Sept. 15 1915; p 634; pp 4½; 30c.

Lathe, Frank E.—*Metal Loss in Copper Slags.* [The most important literature is here dwelt on and curves are shown giving the copper loss under various conditions].—E. & M. J. Aug. 7 1915; p 215; pp 3; Aug. 14 1915; p 263; pp 6*; Aug. 21 1915; p 305; pp 3; 75c.

Newnam, W. E.—*The Newnam Hearth.* [Abst. from a paper to be read at the A. I. M. E. describing the Newnam hearth which is used for smelting lead sulphides and employs a mechanical means for rabbling].—E. & M. J. Oct. 16 1915; p 628; pp 2; 25c.

Pulsifer, H. B.—*Zinc Oxide from Lead Blast Furnace Slag, as in Operation at South Chicago.* [The slags were left by a former company and are now being retreated with a charge of lime and coke].—Met. & Chem. Engg. Nov. 1 1915; p 783; pp 2¾*; 20c.

Rippert, P.—*Neue Beitrüge zur Beurteilungven Rauchschden im Rheinisch-Westfälischen Industriegebiet.* [Deals with the nuisance of the fumes from the zinc and lead district on the Rhine, Germany].—Glückauf Aug. 7 1915; p 776; pp 4; 50c.

Shellshear, W.—*Methods of Handling Waste Products from Mills.* [Describes the methods used at the leading flotation plants of Australia].—Mg. & Engg. Rev. Sept. 6 1915; p 287; pp 5*; 35c. Abst. in M. & S. P. Dec. 11 1915; p 892; pp 4*; 20c.

Simmons, Jesse.—*Tramming Sand-Tailing.* [A record of the disposal of tailings from the Wasp No. 2 mill at Flatiron, S. D.].—M. & S. P. Sept. 25 1915; p 475; pp 1*; 20c.

Simmons, Jesse.—*Trojan Ore and Milling Practice, South Dakota.* [On sampling, crushing and cyaniding the gold-ore where the seepage from the tailings pile is run through another precipitating medium].—M. & S. P. Nov. 6 1915; p 707; pp 3¾*; 20c.

Sinclair, J.—*Tailings Reclaimed by Cableway at Goldfield, Nev.* [The tailings dump is about 75 acres in extent]. Mg. World Oct. 23 1915; p 643; pp 2*; 10c.

Wood, G. W.—*The Rochester Mill, Nevada.* [Costs and a description of the method used for treating the pulp from the thickeners].—M. & S. P. Aug. 28 1915; p 317; pp 3*; 20c.

Worcester, S. A.—*Simple Cyanide-Plant Design.* [A small plant with many automatic features and treating highly oxidized ores].—E. & M. J. Oct. 16 1915; p 631; pp 2½*; 25c.

Ziegel, Henry.—*Metallurgical Analysis.* [Methods of analysis for iron-ores, slag, limestone, etc., having every other page blank for inserted notes.].—Chem. Pub. Co.; pp 66*; $1.

——— *Effect of Sulphur Dioxide on Human Beings.* [Excerpt from the U. S. Bur. of Mines Bull. 98].—E. & M. J. Nov. 27 1915; p 885; pp 1½; 25c.

——— *Kupferextraktion aus Kiosabbränden in Pernau, Livland.* [Contains a flow sheet and a combination thermic and hydro-metallurgical method for extracting copper from pyrite waste].—Metall & Erz Sept. 22 1915; p 379; pp 15*; 50c.

——— *Smelting at Panulcillo, Chile.*—[Custom ores are treated and the slag is high in aluminum].—E. & M. J. Nov. 13 1915; p 787; pp 3*; 25c.

METALLOGRAPHY

Abbott, Robert R.—*Comparison of Heat Treated Steel.* [Contains curves and description regarding the properties of steel which are affected by the introduction of nickel, carbon or manganese. Such properties as elasticity, elongation,

reduction area, hardness and ductility are taken up in detail].—Iron Tr. Rev. July 1 1915; p 22; pp 2*; 25c.

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the district is also taken up here].—M. & S. P. July 17 1915; p 83; pp 3½*; 20c.

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Bissell, Robert W.—*Smelting Methods at Magistral, Durango, Mexico.* [Deals with the history of the growth of companies and smelting in the district, and the description of the blast furnaces with their charges and operation; abst. Col. Sch. of Mines Qtly.].—Mg. World July 3 1915; p 17; pp 2½; 10c.

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Hill, James M.—*Description of High Grade Mining District, California.* [Treats on the history of the district, giving a review of the geology of the formation and ore deposits which occur as veins in rhyolite and andesite. Some of the mines are then taken up and a synopsis of their

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[The center of operations are in the tropics. History, occurrence, mineralogy, uses, etc., are taken up].—Canadian Mg. Jnl. Aug. 1 1915; p 457; pp 4*; 35c.

Verne, C. E.—*Where Jack Makes Millions.* [A historical sketch of mining operations in Missouri].—Zinc & Lead Jnl. Sept. 1915; pp 2*; 20c.

Wegemann, C. H.—*A Reconnaissance in Palo Pinto County, Texas.* [Discusses features which indicate the presence of commercial oil and gas pools].—U. S. G. S. Bull. 21-E; pp 9*.

Wegemann, C. H.—*The Loco Gas Field, Stephens and Jefferson Counties, Oklahoma.* [Gives information on the history and general operations in the district].—U. S. G. S. Bull. 621-C; pp 12*.

Williams, G. F.—*Mining Methods at Kimberley.* [A historical sketch of the early methods is brought to view and followed by an outline of the present method for working the ground, including supports, tramming, etc.].—Mg. Mag. July 1915; p 19; pp 9*; 50c.

Woodworth, R. B.—*The Development of the Steel Drilling Rig.* [A paper read before the American Petro. Soc.].—Western Engg. Dec. 1915; p 240; pp 4½; 35c.

Woodworth, R. B.—*The Evolution of Drilling Rigs.*—A. I. M. E. Bull. Nov. 1915; p 2247; pp 66*; 35c.

Zapffe, Carl.—*Development of the Cuyuna Range.* [Abst. from a paper read before the L. S. M. I. Reviews this range of iron-ore deposits from its beginning].—I. Tr. Rev. Dec. 9 1915; p 1131; pp 3; 25c.

——— *A Flourishing Transvaal Soda Industry.* [The history, treatment and working of natural soda lake deposit, also bringing up the transportation problem].—S. Afr. Mg. Jnl. June 26 1915; p 401; pp 2; 35c.

——— *Alluvial Gold Deposits of New Zealand.* [A history of the life of the various deposits].—Mg. & Engg. Rev. Aug. 5 1915; p 259; pp ¾*; 35c.

——— *Annual Report of the Director of the Mint.* [The year ending June 30, 1915. Includes the production of precious metals].—U. S. Mint Report for 1915; pp 304.

——— *British Columbia, the Mineral Province of Canada.* [On the history, laws, production and mining progress during 1914].—Prov. Mineralogist, Victoria; pp 43*.

——— *Bunsen Society for Applied Chemistry, Germany.*—Met. & Chem. Engg. Dec. 15 1915; p 965; pp 1¾; 25c.

——— *Copper in Germany.* [An abst. from the New York Evening Post, giving a historical review of copper mining in Germany].—E. & M. J. Dec. 25 1915; p 1056; pp 2½; 25c.

——— *Development of Dredging in Yukon Territory, Alaska.* [Dredging started in 1899 and steam thawing is an important point].—E. & M. J. Dec. 25 1915; p 1039; pp 5¾*; 25c.

——— *Development of Mining in the Philippines.* [A historical review of production and growth].—Mg. Jnl. Nov. 27 1915; p 811; pp 1¼; 35c.

——— *Early History of Braden Mines, Chile.* [Takes up the early difficulties and the eventual forming of the company].—E. & M. J. Sept. 4 1915; p 389; pp 2; 25c.

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——— *Fifth Annual Report of the Director of the Bureau of Mines to the Secretary of Interior.*—U. S. Bur. of Mines 5th Annual Report 1915; pp 106.

——— *Gold.* [A review of the history of gold mining and production with particular reference to the provinces of Canada].—Canadian Mg. Jnl. Sept. 1 1915; p 521; pp 3*; 35c.

———*Historical Sketch of the Oil Flotation Process.* [Abst. from A. I. M. E. Proc. on the early discoveries].—Mg. World Dec. 4 1915; p 903; pp ¾; 10c.

——— *Lake Superior Mining Institute.*—Proceedings Vol. XX; pp 34; 35c.

——— *Mining Possibilities of Bolivia—Not a Poor Man's Country.* [Tells of the people and various conditions].—Mg. World Aug. 21 1915; p 295; pp 1*; 10c.

——— *Mining Prospects of the Murchison Range District.* [Gives an idea of the early production and operations in this South African field].—S. Afr. Mg. Jnl. Oct. 30 1915; p 198; pp 1½; 35c.

——— *Retiring Mine Inspector Reviews Coal Trade Conditions.* [The coal resources of Indiana and the production are here reviewed, giving a general idea of the history and conditions influencing the industry in that and other states].—Coal Tr. Bull. July 1 1915; p 51; pp 1½; 25c.

——— *Review of the Tampico Oil Industry.* [History of the district, with figures on production].—Mg. & Oil Age Bull. July 1915; p 184; pp 7; 25c.

——— *Richmond, the Great Petroleum Center, California.* [A general review of production, history, transportation and

the industry in general].—Cal. Derrick Dec. 1915; p 3; pp 3½*; 30c.

——— *The Early History of Pachuca, Mexico.*—Mexican Mg. Jnl. Sept. 1915; p 332; pp 1; 35c.

——— *The History of Gold Mining in the Philippines.* [History goes back as far as the third century when Luzon exported the metal to China].—M. & S. P. Aug. 28 1915; p 325; pp 1¾*; 20c.

——— *Zacatecas, Mexico.* [The geology, history and development of the camp are here taken up in a general way].—Mexican Mg. Jnl. Aug. 1915; p 290; pp 1½; 35c.

EDUCATIONAL

Blake, L. I.—*Epochs in Science.* [An address made to the 1915 class of the Colorado School of Mines].—Canadian Mg. Jnl. Sept. 15 1915; p 565; pp 3¼; 35c.

Rush, W. W.—*Revision of Professional Ideals and Economics.* [A discussion of the road followed by our mining schools of today, pointing out their faults and recommending remedies].—Mg. World Sept. 25 1915; p 477; pp 1¼; 10c.

Willis, C. F.—*The New Era in Mining Education.*—Mg. Sci. Aug. 1915; p 22; pp 2½; 35c.

SCHOOLS AND SOCIETIES

Higgins, W. C.—*Utah Section of A. I. M. E. Makes a Visit to Tintic.*—S. L. Mg. Rev. July 30 1915; p 11; pp 2*; 25c.

Lloyd, G. C.—*Iron & Steel Institute.* [A report of the proceedings of the institute].—E. & F. N. Spon; pp 714*; $4.50.

Mason, F. H.—*Miners' Week at the P. P. I. E.* [An account of the doings during the week devoted to mining at the Exposition].—Canadian Mg. Jnl. Oct. 15 1915; p 631; pp ¾; 35c.

Mattin, Theodore.—*Oil Industry Association and Its Work.*—Mg. & Oil Bull. Nov. 1915; p 284; pp 3; 25c.

Paine, E. B.—*The Engineering Experiment Station of the University of Illinois.* [The article describes the organization at the university for engineering research work].—A. I. E. E. Bull. Oct. 1915; p 2421; pp 8; 35c.

Scholz, Carl.—*Year's Work of the American Mining Congress.* [President's report read at the 1915 annual meeting].—C. Tr. Bull. Oct. 15 1915; p 25; pp 2¼; 25c.

Stevenson, C. S.—*Mining School of the Cleveland-Cliffs Iron Co.* [A review of the methods employed in operating this school for the miners, being abstracted from a paper read before the L. S. M. I.].—Canadian Mg. Jnl. Oct. 15 1915; p 622; pp 4; 35c.

Vickers, C.—*Transactions of the American Institute of Metals.* [A compilation of papers read at various meetings, on the base metal industry].—Amer. Inst. of Metals; pp 394*; $5.

Zern, E. N.—*West Virginia Coal Mining Institute.* [Reviews the proceedings and doings of the meeting at which no officers were elected. The papers read are briefly abstracted].—Coal Age July 3 1915; p 17; pp 1½; 20c.

——— *American Electrochemical Society; Niagara Falls Section.* [Some information is given on transformers for electric furnace work].—Met. & Chem. Engg. Nov. 1 1915; p 776; pp 1; 20c.

——— *American Institute of Electrical Engineers.* [Annual convention held at Deer Park, Md., on June 29, 1915. Gives the details of the proceedings at the meeting with synopses of the principal discussion and papers read].—Elect. Rev. July 10 1915; p 69; pp 7; 20c.

——— *American Institute of Electrical Engineers.* [Proceedings at the St. Louis meeting held Oct. 19 1915].—Elect. Rev. & West. Elect. Oct. 30 1915; p 806; pp 3*; 20c.

——— *American Institute of Electrical Engineers — Vancouver Branch.* — Mg. Engg. & Elect. Rec. Sept. 1915; p 165; pp 1½; 35c.

——— *American Institute of Metals.*—E. & M. J. Oct. 9 1915; p 597; pp ¾; 25c

——— *American Iron and Steel Institute, Cleveland Meeting.* [Oct. 19-22, 1915].—Iron Age Oct. 28 1915; p 984; pp 6½*; 30c.

——— *American Iron and Steel Institute.* [Proceedings of meeting].—I. Tr. Rev. Oct. 28 1915; p 846; pp 2½*; 25c.

——— *American Mining Congress at San Francisco.* [A program of the things to be participated in at the meeting].—Mg. World Sept. 18 1915; p 444; pp 1; 10c.

——— *American Mining Congress.* [Proceedings of their meeting at San Francisco].—E. & M. J. Oct. 2 1915; p 550; pp 1; 25c.

——— *American Petroleum Society, First Coast Meeting.*—Mg. & Oil Bull. Oct. 1915; p 272; pp 1; 25c.

——— *Annual Meeting of the Mining and Geological Institute of India.*—Trans. of the M. & G. Inst. of Ind. June 1915; pp 13; 50c.

——— *Association of Iron and Steel Electrical Engineers.* [Proceedings of the ninth annual convention].—Elect. Rev. & West. Elect. Sept. 18 1915; p 521; pp 3; 20c.

——— *Association of Mining Electrical Engineers.* [Gives a list of the new members. The main part of the article is synopses of the various discussions and papers presented].—I. & C. Tr. Rev. June 25 1915; p 885; pp ½; 35c.

——— *Association of Mining Electrical Engineers' Meeting.*—I. & C. Tr. Rev. Oct. 1 1915; p 427; pp 1; 35c.

——— *Association of Mining and Electrical Engineers, England.* [The midland branch at which a paper "The Use and Abuse of Oils in Mining Plant," was read].—I. & C. Tr. Rev. Nov. 12 1915; p 599; pp 1; 35c.

——— *Atti Della Associazione fra gli Industriali Metallurgici Italiani.* [The Italian Metallurgical Soc.].—Metallurgia Ital. June 30 1915; p 365; p 350; pp 10; $1.

——— *Bericht des Vereines für die Bergbaulichen Interessen im Nordwestlichen Böhmen zu Teplitz.* [A report on the coal industry and production in northwestern Bohemia, the district of Teplitz].—Montanist. Rundschau Aug. 16 1915; p 568; pp 5; 35c.

——— *Canadian Mining Institute—Western Branch.* [Twentieth general meeting at Rossland, B. C., July 15, 1915].—Canadian Mg. Jnl. Aug. 1 1915; p 467; pp 1; 35c.

——— *Chemical Industry Society.* [The second meeting of the New York branch held on Nov. 19, 1915].—Met. & Chem. Engg. Dec. 1 1915; p 921; pp 2; 35c.

——— *Electrical Papers at the Manchester Meeting of the British Association for the Advancement of Science.*—Elect. Rev. & West Elect. Oct. 9 1915; p 672; pp 4½; 25c.

——— *Fifty-Three Standards Considered by American Society for Testing Materials.* [A synopsis of the proceedings of the society is given. Also abstracted reviews from the papers read and questions discussed].—Iron Tr. Rev. July 1, 1915; p 37; pp 6; 25c.

——— *First Aid and Mine Rescue Meet at Cle Elum, Wash.*—Alaska & N. W. Mg. Jnl. Aug. 1915; p 25; pp 2; 30c.

——— *Illinois Miners' and Mechanics' Institute Suspended.*—Coal Age Aug. 14 1915; p 256; pp ¾; 20c.

——— *Instituto de Ingenieros Civiles.* [A meeting of the Spanish engineers' society].—Madrid Cientifico July 15 1915; p 430; pp 4; 35c.

——— *Institution of Mining Engineers' Annual Meeting at Leeds, England.* [Proceedings of the meeting].—Coll'y Guard. Sept. 24 1915; p 618; pp 3⅛; 35c.

——— *Institute of Petroleum Technologists; Origin and Progress.*—Petro. Tech. Inst., London; 75c.

——— *International Engineering Congress.* [A synopsis of the proceedings of the congress at San Francisco].—Jnl. Elect. Power & Gas. Oct. 1915; p 257; pp 9; 35c. Mg. World Oct. 2 1915; p 529; pp 1; 10c.

——— *International Gas Congress, San Francisco.* [Report of meeting].—Nat. Gas. Jnl. Oct. 1915; p 481; pp 3; 30c.

——— *Iron and Steel Institute.* [Consists for the most part of a paper on the occurrence and influence of nitrogen on iron and steel].—I. & C. Tr. Rev. Oct. 1 1915; p 415; pp 1½*; 35c.

——— *Lake Superior Mining Institute Twentieth Annual Meeting.* [Details of the meeting on the Cuyuna range, Minn.]—E & M. J. Sept. 11 1915; p 446; pp 1; 25c.

——— *Mechanical Engineers' Meet.* [Proceedings of the A. S. M. E. at San Francisco].—Iron Age Sept. 30 1915; p 746; pp 1½; 30c.

——— *Meeting of the Alabama Coal Operators' Association.* [Was the sixth annual meeting, held July 10].—Coal Age July 24 1915; p 129; pp 1½*; 20c.

——— *Meeting of the Iron and Steel Institute.* [Held on Sept. 23, England].—I. & C. Tr. Rev. Sept. 24 1915; p 375; pp 2; 35c.

——— *Metallurgy at the International Engineering Congress.* [Brief abstracts are given of the various papers read bearing on the material or operation under this division].—Met. & Chem. Engg. Oct. 15 1915; p 721; pp 8½; 30c.

——— *Midland Institute of Mining, Civil and Mechanical Engineers, England.* [Proceedings of the meeting and briefs on the papers, "Compressed Air and Coal Cutting" and "Earth Movements on Coal Measures"].—Coll'y Guard. Oct. 8, 1915; p 725; pp 3; 35c.

——— *Mine Inspectors' Institute of United States; Proceedings.*—June, 1915; pp 100.

——— *National Coal Association Plans Things Worth While.* [The social work of the association is here taken up].—C. Tr. Bull. Aug. 2 1915; p 35; pp 2; 25c.

——— *National Exposition of Chemical Industries.* [Proceedings of the ex-

position to be held at New York City]:—E. & M. J. Sept. 11 1915; p 441; pp 1; 25c.

——— *National Association of Colliery Managers, North of England Branch.* [A synopsis of the papers read].—I. & C. Tr. Rev. July 23 1915; p 99; pp 1; 35c.

——— *National Association of Colliery Managers.* [Meeting held on Oct. 16].—I. & C. Tr. Rev. Oct. 29 1915; p 539; pp 1*; 35c.

——— *Nineteenth Session American Mining Congress.* [A review of the proceedings].—Mg. World Oct. 2 1915; p 527; pp 2; 10c.

——— *North of England Institute of Mining and Mechanical Engineers.* [The annual meeting Aug. 7 1915].—I & C. Tr. Rev. Aug. 13 1915; p 199; pp 1; 35c.

——— *North of England Institute of Mining and Mechanical Engineers.* [Proceedings of the meeting with a summary of some of the papers].—Coll'y Guard. Oct. 15 1915; p 775; pp 2; Dec. 17 1915; p 1233; pp 2; 70c.

——— *North Staffordshire Institute of Mining and Mechanical Engineers.* [The 43rd annual meeting].—Coll'y Guard. Oct. 29, 1915; p 873; pp 1⅓; 35c.

——— *Partial Report of the Committee on Standardization of the Mining and Metallurgical Society of America.* [An attempt is made to standardize things which are written about so that a more definite idea may be had by the reader].—Bull. Canadian Mg. Inst. Sept. 1915; p 656; pp 12; 35c.

——— *Proceedings of the American Institute of Metals at Atlantic City, N. J., Sept.* 1915.—Iron Tr. Rev. Oct. 7, 1915; p 702; pp 3; 25c.

——— *Proceedings of the meeting held at Asanso by the Mining and Geological Institute of India.*—M. & G. Inst. of Ind. June 1915; p 35; pp 10; 50c.

——— *Proceedings of the Twenty-second Annual Convention of the National Fertilizer Association, Hot Springs, Va.* [Gives entire details for the first 2 days, July 12 and July 13, 1915].—Amr. Fertilizer July 24 1915; p 47; pp 76*; 20c.

——— *Rocky Mountain Coal-Mining Institute.* [A complete outline of the proceedings of the society at their summer meeting at Trinidad, Colo.].—Coal Age Aug. 7 1915; p 215; pp 3; 20c.

——— *San Francisco Meeting of the American Institute of Chemical Engineers.* [Proceedings of the meeting].—Met. & Chem. Engg. Sept. 15 1915; p 603; pp 1½*; 30c.

——— *Scientific and Technical Societies Prove of Value in Many Ways.* [Editorial].—Mg. World Nov. 13 1915; p 780; pp ½; 10c.

——— *Seattle Meeting of the American Chemical Society.* [Proceedings of the meeting on Aug. 31 1915].—Met. & Chem. Engg. Sept. 15 1915; p 587; pp 3*; 30c.

——— *Society of Chemical Industry.* [Consists of the proceedings and some of the papers read at the Manchester meeting].—Met. & Chem. Engg. Sept. 1 1915; p 543; pp 4; 30c.

——— *Standardizing Methods That Have Been in Effect for a Half Century.* [Terms to be adopted in writing and standards to be adopted in tests, by the M. & M. Soc. of America].—Mg. World Sept. 25 1915; p 483; pp 1; 10c.

——— *Technical Society Meetings and Lectures at the National Exposition of Chemical Industries.*—Met. & Chem. Engg. Sept. 15 1915; p 629; pp ¾; 30c.

——— *The West Cannock Sinkings, England.* [A review of the visit paid by the National Ass'n of Coll'y Eng.].—I. & C. Tr. Rev. Aug. 27 1915; p 254; pp 2*; 35c.

——— *Twentieth Annual Meeting of the L. S. M. I.* [Takes up their meeting on the Cuyuna and Gogebic ranges in Minn. and Mich.].—Mg. World. Sept. 18 1915; p 436; pp 1; 10c.

——— *Warwickshire and Staffordshire Institute of Mining Engineers.*—Coll'y Guard. Dec. 10 1915; p 1189; pp 1; 35c.

——— *West Virginia Coal Mining Institute Holds Summer Meeting.* [Gives a brief outline of the proceedings of the institute at their summer session, held June 16 and 17, at Wheeling, W. Va. No officers were elected; the meeting was only one for discussion and the reading of papers].—Coal Tr. Bull. July 1 1915; p 21; pp 2; 25c.

——— *West Virginia Coal Institute.* [A meeting held at Fairmont, W. Va., Dec. 8 and 9].—Coal Age Dec. 25 1915; p 1053; pp 3¾; 20c.

——— *Western Branch of the Canadian Mining Institute.* [July meeting, giving the proceedings and papers read].—Bull. Canadian Mg. Inst. Sept. 1915; p 668; pp 21; 35c.

——— *What to Look for in the Foundry Convention Papers.* [Proceedings of the American Foundrymen's Association].—I. Tr. Rev. Sept. 30 1915; p 615; pp 2; 25c.

——— *Work Accomplished by the Illi-*

nois Miners' and Mechanics' Institute.—[Is covered by a presidential address].—Coal Age Nov. 27 1915; p 883; pp 1¾; 20c.

FINANCIAL

Bartley, Jonathan.—*Can Profits Be Made in Graphites?* [In which a general review of the graphite industry is taken up and it is shown why it is so unprofitable. The author presents a remedy for this situation by having the mines manufacture their own raw product instead of selling it in the raw state].—Iron Age July 8 1915; p 86; pp 2¾; 30c.

Blood, C. C.—*Tyrone District, Grant County, New Mexico.* [On the expenditures, development, etc., in the district].—Mg. World Aug. 21 1915; p 291; pp 2¾*; 10c.

Ervin, F. J.—*Principles of Continuous Melting Applied.* [The argument of capital invested, etc., which favor continuous molding].—Iron Age Sept. 23 1915; p 686; pp 1½; 30c.

Finlay, J. R.—*Essentials of Organization and Management.* [The misunderstandings of mine management].—E. & M. J. July 31 1915; p 171; pp 6*; 25c.

Fohl, W. E.—*Valuation of Coal Land.* [Consideration of the subject from a financial point. Paper read before the West Virginia Coal Mg. Inst.].—C. Tr. Bull. Aug. 16 1915; p 25; pp 2; 25c. Coll'y Eng. Sept. 1915; p 64; pp 2; 30c.

Gallard, J. L.—*European Mining Finance.* [A paper read to the International Mng. Congress].—Canadian Mg. Jnl. Dec. 1 1915; p 724; pp 4¾; 35c.

Garrison, Lynwood F.—*Speculation in Mines.* [Discusses the speculative ideas of mining investment wherein is told how other countries apply themselves to this problem].—M. & S. P. July 3 1915; p 17; pp 3; 20c.

Haag, Edward.—*Economy in Mill Construction.* [Treats on preparation, financing and designing of mills].—S. L. Mg. Rev. Aug. 15 1915; p 14; pp 2; 25c.

Hauer, D. J.—*Economics of Contracting.* [Cost-keeping and estimating].—E. H. Baumgartner, Chicago; pp 334*; $2.50.

Howard, L. O.—*Mining in Utah.* [Brings out current progress in the state].—M. & S. P. Oct. 30 1915; p 666; pp 2*; 20c.

Lombardi, M. E.—*The Valuation of Oil-Lands and Properties.* [Abst. from a paper read at the Inter. Engg. Congress].—Western Engg. Oct. 1915; p 153; pp 6¼*; 35c. Oil Age Oct. 1915; p 7; pp 5½; 35c.

Macleod, W. A.—*The Future of Mining in Western Australia.* [Is a review of the industry from a business standpoint].—Jnl. Chamber of Mines Aust. May 31 1915; p 95; pp 3; 80c.

Maxwell-Lefroy, E.—*Wolframite Mining in the Tavoy District, Lower Burma.* [Abst. of a paper read before the Inst. of Mg. & Met. The ore occurs in both placers and lode; the article gives general items of financial and mining interest].—I. & C. Tr. Rev. Dec. 17 1915; p 742; pp 1¼; 35c.

Probert, F. H.—*Valuation of Metal Mines.* [A review of the Ray Con. Co.'s valuation in letter form].—M. & S. P. Oct. 30 1915; p 657; pp 2½; 20c.

Rickard, T. A.—*The Valuation of Metal Mines.* [A paper presented at the International Engineering Congress].—M. & S. P. Oct. 9 1915; p 548; pp 5½; 20c. Canadian Mg. Jnl. Dec. 15 1915; p 748; pp 4½; 35c.

Storms, F. H.—*The Interpretation and Use of Financial Reports.* [An address delivered to the Colorado School of Mines on the ascertaining and analyzing of business conditions].—Colo. School of Mines Qtly. Dec. 1915; p 29; pp 6; 35c.

——— *Annual Report of the Mexican Petroleum Co., Ltd., of Delaware and Its Subsidiaries.* [The Huasteca Petroleum Co. is also taken up and the production and financial statements of each are given].—Fuel Oil Jnl. Aug. 1915; p 8; pp 8; 35c.

——— *Capital for the Mining Industry.* [A review on financing mines in Western Australia].—West. Aust. Chamber of Mines June 30 1915; p 115; pp 5; 75c.

——— *Commercial Problems of the Foundry.* [Abst. from "Principles of Iron Founding" by Dr. Moldenke].—Iron Age Sept. 23 1915; p 707; pp 3; 30c.

——— *Mining Activity in the Pilgrims' Rest District, South Africa.* [Abst. from the S. Afr. Mines Dept. Report showing the district to be one for the poor man].—S. Afr. Mg. Jnl. Oct. 16 1915; p 151; pp 1¼; 35c.

——— *Mine Inspectors' Institute of the United States of America.* [Presidential address at the 8th annual meeting].—Coal Age Nov. 13 1915; p 797; pp 2; 20c.

——— *Poor's Manual of Industrials for* 1915. [A book giving the organization, holdings, officers, earnings, dividends, etc., of companies, including 435 pages on mining companies].—Poor's Manual Co.; pp 2872; $7.50.

——— *Stock Exchanges to Afford More Protection to Mining Investors.* [Editorial on a means to be adopted so as to enable more reliable information to be had regarding properties].—Mg. World Sept. 11 1915; p 410; pp ½; 10c.

——— *The Dissolution of the Guggenheim Exploration Co.*—Mg. World; Dec. 4 1915; p 899; pp 1; 10c.

——— *The Valuation of Gold Mining Shares.* [On the present value of an annuity, interest and sinking fund and a simple formula for calculating share values].—S. Afr. Mg. Jnl. Nov. 13 1915; p 241; pp 1; Nov. 20; p 277; pp 1¼; 70c.

MISCELLANEOUS GENERAL

Alderson, Matt W.—*Leaves from a Prospector's Note Book.* [Tells of various experiences which are common with the prospector].—Mg. World Oct. 9 1915; p 567; pp 1½; 10c.

Austin, E. P.—*Notes on Faults in Cables.* [A paper read before the A. I. E. E.].—Elect. Rev. Oct. 22 1915; p 540; pp 1½*; 35c.

Balliet, Letson.—*The Cost of Hiring and Firing Miners.* [The trouble, delay and loss due to the labor question of impermanent labor is here taken up and it is shown absolutely that money is wasted by not making help satisfied, so as to retain them].—Mg. World July 10 1915; p 55; pp 2; 10c.

Bartley, Jonathan.—*Can Profits Be Made in Graphites?* [In which a general review of the graphite industry is taken up and it is shown why it is so unprofitable. The author presents a remedy for this situation by having the mines manufacture their own raw product instead of selling it in the raw state].—Iron Age July 8 1915; p 86; pp 2¾; 30c.

Bates, E. L.; Charlesworth, F.—*Mechanics for Builders.*—Longmans, London; 2 vols.; pp 444; $1.75.

Blake, L. I.—*Epochs in Science.* [An address made to the 1915 class of the Colorado School of Mines].—Canadian Mg. Jnl. Sept. 15 1915; p 565; pp 3¼; 35c.

Blythe, W. B.—*Pertinent Points for Consulting Metallurgists.* [A paper read before the Aust. Inst. of M. E.].—Mg. World Aug. 14 1915; p 256; pp 1; 10c.

Bretherton, S. E.—*Stop Unnecessary Waste of Metals in Mining.* [Showing that conservation of resources will soon have to be thought of with metals, as with other limited products].—Mg. World Sept 18 1915; p 437; pp 2; 10c.

Brunton, C. W.—*Technical Reminiscences.* [A story telling of the author's experiences].—M. & S. P. Nov. 27 1915; p 811; pp 7½*; 20c.

Bullock, S. C.—*A Trip Through Bolivia.* [A review of things seen and experiences encountered in the country, giving information regarding traveling accommodations].—E. & M. J. Sept. 11 1915; p 421; pp 3½*; 25c.

Diller, J. S.—*Guidebook of the Western United States; the Shasta Route and Coast Line.*—U. S. G. S. Bull. 614; pp 142*.

Ellsworth, C. E.; Davenport, R. W.—*Surface Water Supply of the Yukon-Tanana Region, Alaska.* [Presents description of streams, rivers, springs and other sources of water giving their location and complete figures regarding the amount of water which may be had from them at various seasons of the year].—U. S. G. S. Water Supply Paper 342; pp 543*.

Farish, J. B.—*Some Instances of Mine Salting.* [From the proceedings of the M. & M. of America on experiences of the author].—Queen. Gov't Mg. Jnl. Aug. 14 1915; p 394; pp 2; 35c.

Fulton, C. H.—*Methods of Paying for Metal Contents of Ores.* [From Bur. of Mines Tech. Paper 83, giving the general practice used in settling for ore sales].—M. & S. P. Sept. 11 1915; p 392; pp 5; 20c.

Garrison, F. Lynwood.—*Mining Conditions in China.* [Is a brief review of the history of the Chinese people, the geography and topography of their country, the geology and coal deposits of the country and the many opportunities for engineers].—E. & M. J. July 3 1915; p 26; pp 2½; 25c.

Garrison, Lynwood F.—*Speculation in Mines.* [Discusses the speculative ideas of mining investment wherein is told how other countries apply themselves to this problem].—M. & S. P. July 3 1915; p 17; pp 3; 20c.

Gates, A. J.—*Catalogue of Technical Periodicals.* [A synopsis of all technical papers, both foreign and domestic, in alphabetical form].—United Engg. Soc.; pp 110; $3.

Gilbert, C. G.—*Mineral-Industry Exhibit at the National Museum.* [Model reproductions of all the important mineral industries are shown].—E. & M. J. Sept. 18 1915; p 470; pp 2½*; 25c.

Goodenough, G. A.—*Properties of Steam and Ammonia.* [A technical study involving thermo-dynamics].—J. Wiley & Sons; pp 108*; $1.25.

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Authors' Index

A

Abbott, Robert M. 59, 62, 70, 74, 181, 214, 215
Adam, H. R. 20, 69, 165, 166
Adams, F. W. 59, 195, 215
Adams, G. F. 79, 144, 147, 151
Addicks, Lawrence. 37, 179, 181, 188, 205, 213
Adsit, C. G. 194, 203
Aikens, Warren. 34, 41, 46, 130, 136, 170, 191, 194, 203
Alden, R. C. 54
Alderson, Matt. W. 115, 226
Aldrich, C. H. 29, 179, 187, 213
Allen, E. T. 7, 15, 42, 173, 177
Allen, G. L. 45, 162
Allen, R. C. 1
Allenson, A. C. 69
Andersen, Olaf 13, 110
Anderson, A. E. 123, 195
Anderson, Robert. 1, 98, 99, 118, 119
Anderson, R. P. 172, 175, 213
Anderson, Thomas 195
Andrews, H. 117
Andros, S. O. 79, 87, 88, 123, 128, 129, 218
Arber, Newell, E. A. 1, 82
Arbogast, C. O. 105
Archibald, Hugh 89, 147
Arentz, S. S. 1, 23, 34, 44, 46, 188
Armstrong, C. G. 70, 109, 140, 197
Arnold, H. F. W. 141, 203
Ashley, G. H. 1, 90, 151, 218
Atchison, L. 68, 173, 177
Austin, E. P. 130, 226
Austin, F. E. 196
Austin, H. C. 117
Austin, W. L. 37, 188, 203
Ayers, J. G., Jr. 60, 215

B

Bach, C. 130
Bacon, C. J. 64, 96, 198, 211
Baily, T. F. 59, 77, 175, 179, 181
Bain, H. F. 73, 151
Bains, T. M., Jr. 45, 50, 162, 179
Baker, J. A. 20, 29, 166, 168, 203
Ball, J. M. 216
Ball, L. C. 1, 23, 70, 117, 216, 219
Balliet, Letson 119, 125, 135, 136, 147, 203, 226
Balzari, R. A. 191, 194
Bancroft, G. J. 16, 27, 32, 34, 44, 46, 47, 48, 52, 151
Bancroft, Howland 1, 23
Bancroft, J. A. 1, 34, 40, 42, 46, 151, 219
Barbour, Percy E. 25, 123, 151, 203
Barbour, W. 123, 173
Barnet, P. C. 62, 172
Bartlett, C. O. 96, 186
Barrett, L. P. 1, 54
Bartley, Johnathan. 111, 135, 136, 225, 226
Baruch, Edgar 151, 172
Bassett, Robert H. 61, 122, 209
Bastin, E. S. 11, 14, 23, 30, 71, 76, 111, 151
Bates, E. L. 226
Bauer, O. 61, 160, 172, 176
Baumann, D. F. 130, 212
Beard, J. R. 196
Beckman, J. W. 77, 175, 179, 188, 196, 203
Beecher, M. F. 105, 187, 205
Beeson, J. J. 1, 11, 40, 172
Belchic, G. 45, 162
Bell, A. F. L. 100, 151
Bell, J. M. 115
Bell, J. W. 87
Bencel, Paul A. 198
Bennett, B. W. 130
Benson, H. K. 77, 90, 101, 151
Berlich, Henry 71, 73, 134
Bertsch, A. 14, 113, 172, 205
Best, W. N. 96, 101, 186
Betts, A. G. 69, 176, 179, 209
Bischoff, J. W. 89, 148, 149
Bissell, H. R. 198
Bissell, Robert W. 20, 25, 29, 37, 41, 164, 168, 181, 219
Bjerregaard, A. P. 100, 209
Black, James 79, 124
Blackwell, E. 55
Blake, L. I. 222, 226
Bleeck, A. W. G. 1, 99, 120
Bleininger, A. V. 64, 105, 109
Bleininger, C. S. 105, 110, 209
Blizard, John 96, 206
Blood, C. C. 1, 27, 34, 46, 225
Blythe, W. B. 189, 226
Bocking, F. 60, 64, 187, 208
Boero, J. 106, 134
Bogitch, M. B. 68, 215
Boise, C. W. 1, 110, 164
Bolton, H. 1, 82
Bondolfi, F. 101, 176, 205
Bonine, C. A. 1, 98, 103, 115
Ponini, C. F. 59, 62, 179, 181
Bonnett, E. H. 104, 205
Booher, J. M. 147
Borchers, W. 37, 45, 50, 181
Borman, W. 61, 96, 181
Bosqui, F. L. 20, 160, 164, 165, 166, 168, 189, 213
Bossinger, W. R. 62
Bowen, C. F. 2, 99, 111, 115, 172, 176
Bowen, N. L. 1, 11, 14, 117, 172
Bowie, C. P. 98, 100, 126
Bowles, O. 108, 137, 145
Boyd, H. T. 99, 206
Brackett, Geo. S. 79, 83, 84, 135, 137, 141, 148, 150, 191, 194
Bradley, G. O. 160, 168
Bradley, H. 93, 112
Bradley, Linn. 175, 187, 194, 213
Bradley, W. W. 76, 104, 107, 108, 113, 137, 151
Breckenridge, L. P. 90, 96
Bretherton, S. E. 45, 90, 137, 181, 213, 226
Briggs, Henry 88, 89, 128, 147
Bright, Graham 83, 140, 191
Brinley, C. C. 96, 198, 201, 203
Brinsmade, R. B. 77, 216
Brisker, Karl 59, 181
Broan, J. M. 54, 120, 123, 124, 172
Brooks, A. H. 2, 16, 27, 32, 34, 40, 42, 46, 54, 73, 76, 77, 101, 138, 151
Brooks, B. T. 218
Broughton, H. H. 77, 83, 133, 141, 191
Brown, E. C. 62, 213
Brown, G. C. 26, 32, 42, 92, 104, 106, 112, 137, 151
Brown, G. E. 16, 73, 115, 124, 140, 219
Brown, J. 83, 130, 141
Brown, J. F. K. 83, 84, 85, 89, 92, 120, 128, 137, 141, 148, 151
Brown, R. E. 84, 130, 191, 197
Browne, D. H. 37, 151, 181, 188
Bruckmiller, F. W. 114, 172, 176
Brunton, Fred K. 37, 122, 141, 148, 181, 203, 226
Bryan, J. H. 66, 196
Bull, R. A. 57, 59, 65, 96, 101, 211
Bullock, S. C. 73, 226
Bunker, C. R. 2, 16, 27, 44
Burchard, E. F. 2, 54, 56, 62, 104, 110, 114, 115, 118, 151, 164
Burgess, G. K. 31, 33, 73, 172, 182, 189, 199, 206, 211, 212, 215
Burley, G. W. 201
Burman, B. F. 37, 59, 182, 209
Burr, F. L. 54, 124, 130, 135
Burrell, G. A. 87, 99, 103, 176, 206

Burroughs, Wilbur Greeley.....79, 84, 92, 118, 151, 152
Burrows, R. P.....125, 191, 203
Butters, C.....162, 166
Butts, Charles.....2, 105, 106, 107
Buzzo, A. E.....120, 197
Bryan, J. H.....66

C

Cain, Joseph.....87, 137
Cairnes, D. D.....2
Callow, J. M.....162, 168, 182
Calvert, A. F.....2, 16, 54, 110, 111, 113, 126
Cameron, F. K.....112, 118
Cameron, W. E.....98, 115
Camp, J. M.....61, 68, 176
Campbell, C. M.....34, 46, 125
Campbell, E. D.....59, 62, 104, 182, 194
Campbell, J. R.....128
Campbell, W.....215
Capps, S. R.....2, 5, 12, 16, 30, 32, 41, 140, 152, 219, 220
Carpenter, H.....126, 127
Carpenter, J. A.....29, 166, 170, 209
Carroll, W. C.....68
Carse, J. H.....123
Carson, H. Y.....63, 216
Carter, F. E.....94
Cartlidge, Oscar.....126, 147
Carver, D. F.....16, 134, 164
Casler, M. D.....106
Cazalat, P.....16, 124, 129
Chalmers, G.....128, 148
Chamberlin, R. T.....4, 23, 70, 110
Chance, H. M.....218
Channing, J. Parke.....77, 217, 227
Chapman, C. M.....106, 107, 206
Charlesworth, C.....226
Chatellier, Le Hardy.....62, 215
Cheney, C. A. Jr.....117
Chodzko, A. E.....134, 197
Chrisp, George.....94, 95, 219
Christopher, J. E.....93, 95, 187
Clansman, —.....83, 117, 137, 141
Clapp, C. H.....2, 66, 103, 104, 106, 118, 120, 182, 219
Clark, Allan J.....20, 122, 160, 164, 165, 166, 169, 182, 188, 209
Clark, H. H.....85, 87, 125, 145, 191, 212
Clarke, E. de C.....2, 14, 23
Clarke, F. W.....14, 176
Clay, W. A.....37, 141, 182
Clennell, J. E.....162, 164, 166, 172, 209
Cleveland, M.....148
Clevenger, G. H.20, 29, 37, 166, 175, 179, 190
Cliff, R. C.....86, 141, 191
Cobb, J. W.....187, 206, 209
Coghill, W. H.....162, 188
Cole, Burton.....37, 164, 169, 170
Cole, L. H.....2, 113, 118
Coleman, F. C.....84, 86, 94, 95, 201
Coleman, J. E.....83, 89, 141, 149
Collins, E. A.....126, 135
Collins, H. F.....20, 182, 209
Collins, J. H.....74, 75, 152
Colman, R. W.....37, 73, 176
Comstock, Geo. F.....62, 68, 71, 75, 215
Concha, A.....101
Cone, E. F.....37, 62, 65, 182, 215
Conover, C. B.....15, 173
Coons, A. T.....108, 152
Cooper, A. S.....103
Copeland, D.....14, 73, 148, 152, 164, 176, 182, 196, 198, 202
Coppock, J.....88, 89, 123, 125, 128
Cornell, Sidney.....59, 179, 203
Cornet, F. C.....79, 87, 89, 128, 197
Corse, W. M.....68, 75, 205
Coxe, E. H.....79, 85
Crampton, E. V.....21, 35, 51, 77, 176
Crane, G. W.....2, 11, 23, 30, 40
Crawford, F. G.....166, 170, 172
Crider, A. F.....2, 82, 118
Cromwell, B. H.....46, 124, 129
Crook, W. J.....21, 29, 166, 206
Crosby, F. B.....86, 89, 128, 191
Crossfield, A. S.....101
Crozier, H. W.....100, 126
Cullen, Wm.....123, 145
Cummings, L. M.....120, 206
Cunningham, E. A.....189, 201
Curran, Harry T.....169, 170
Czorchralski, J.....66, 77

D

Dake, C. L.....2, 11, 54, 79, 118, 172
Dalby, W. E.....199, 211
Dalton, A. C.....179
Dalton, A. J.....85, 120
Dalton, E. C.....62
Daly, R. A.....2
Darnell, D. L.....142, 143, 170, 211
Darton, N. H.....87
Davenport, R. W.....3, 134, 212, 226
Davey, E.....147
Davis, C. A.....96, 152
Davis, H. A.....105, 213
Davis, N. B.....11, 38, 47, 50, 187
Davis, P. B.....172, 175, 209
Davis, W. H.....126, 130
Dean, E. W.....100, 177
Dean, G. R.....196
Dean, Samuel.....79, 120, 129, 141
Degenhardt, W. R.....198, 200, 201
DeGolyer, E.....2, 11, 99
Deihart, J. D.....
Deiss, E.....61, 160, 172, 176
DeKalb, C.....3, 34, 40, 46
DelMar, Algernon.....21, 160, 166
DeWilde, E. J.....44, 48, 120
DeWitt, C. W.....16, 44, 115
DeWolfe, E. C.....83, 86, 141, 191
Dickenson, E. H.....137
Dickinson, H. C.....182, 212
Diehl, A. N.....57, 59, 182, 187, 199, 209, 213
Diller, J. S.....62, 69, 109, 114, 153, 226
Dittus, E. J.....176, 209
Divis, Julius.....130, 190, 197
Doak, S. E.54, 56, 57, 59, 62, 112, 169, 187, 189
Dobbelstein, K.....95, 141, 194
Dolbear, S. H.....70, 111, 113, 114
Dole, R. B.....77, 152
Donaldson, Francis.....124, 128
Donath, E.....3, 108, 111, 168
Donovan, P. W.....54, 115, 120
Doring, T.....33, 34, 44, 46, 54, 68, 69, 70, 74, 75, 76, 109
Dorrance, C., Jr.....90, 135
Dorsey, A. L.....62, 179, 203
Dorsey, H. G.....66, 68, 196
Dougill, G.....187, 209
Douglas, J.....77, 217, 227
Dowling, D. B.....3, 82, 92, 118, 152
Dowling, W. R.....160, 170
Dresden, E. G.....101
Drucker, A. E.....21, 45, 50, 164, 166, 169
Drysdale, C. W.....3, 11, 14, 71, 152
Dufault, S.....34, 46, 104, 109, 111, 152
Dunlop, J. P.....16, 27, 32, 34, 42, 44, 46, 48, 52, 77, 152
Durant, H. T.....21, 29, 166
DuRell, C. T.....162, 166, 188, 209
Dzmaj, Karl.....98, 152
Dyer, E. I.....98, 102, 152

E

Eakin, H. M.....3, 16, 23, 54, 73, 133, 152, 170
Earl, T. C.....16, 73, 115, 132
Eastlake, A. W.....8, 98, 116, 121, 174, 207
Easter, H. F.....38, 142, 182
Eddy, L. H.....16, 98, 103, 107, 133, 141, 216
Edmunds, H. R.....176, 201
Edwards, C. A.....66, 69, 71, 77, 215
Edwards, Geo. E.....54, 57, 66, 137, 196, 201, 203
Efsall, H. J.....79, 91, 143
Egloff, Gustav.....101
Ehrlich, M. W.....126
Eimer, H.....196

Ellicott, E. B. 195, 219
Ellis, A. J. 6, 227
Ellis, Hubert I. 16, 17, 27, 44, 48, 51, 107, 115, 133, 134, 137, 213, 219
Ellsworth, C. E. 3, 226
Elwood, W. F. 90, 176, 211
Emerson, H. 97
Emley, W. E. 106, 206
Ervin, F. J. 59, 65, 182, 225
Estep, H. Cole 62, 182, 186
Evans, G. S. 61, 206
Evans, J. H. 79, 124, 129

F

Falck, G. E. 111, 176, 188
Farish, J. B. 226
Fay, Albert H. 87, 95, 108, 123, 144, 152, 191, 196
Fearnsides, W. G. 3, 91
Feild, A. L. 90, 211
Ferey, M. 79, 123, 191
Ferguson, H. G. 3, 14, 23
Fernald, R. H. 97
Fickett, H. L. 117
Fieldner, A. C. 90, 211
Finlay, J. R. 77, 135, 148, 217, 225, 227
Fisher, J. P. 103
Fisk, G. 198, 199, 203
Fleck, Herman 71, 152, 164, 176, 219
Foerster, F. 175
Fohl, W. E. 91, 225
Foley, F. J. 83, 142, 191
Folprecht, H. 3, 82, 92, 152
Foote, F. W. 41, 148
Foote, P. D. 182, 189, 212
Forbes, C. R. 120, 206
Ford, W. E. 14
Forrester, J. B. 87, 88
Foster, E. H. 199
Fowle, F. F. 192, 194
Fowler, E. C. 31, 152
Foye, W. G. 3, 14
Frank, K. G. 57, 62, 179, 219
Franklin, E. C. 21, 31, 47, 187, 209, 214
Fraulob, Ing. 73, 142, 182
Frawer, Arthur 38, 176
Fray, S., Jr. 129
Freeman, W. C. 125
Freitag, K. 29, 170
French, Herbert J. 29, 38, 162, 206
French, T. 49, 119
Freyn, H. J. 94, 95, 187, 198
Friend, J. N. 62, 172
Fuetter, C. J. 137
Fuller, —— 172
Fulton, C. H. 77, 137, 170, 189, 226
Futers, T. C. 83, 85, 120
Furman, F. D. 201

G

Galbraith, C. S. 21, 29, 162, 166, 216
Gale, H. S. 111, 114, 140, 156, 218, 227
Gall, O. D. H. 172, 175
Gallard, J. L. 225
Galloway, J. D. 17, 115
Galloway, R. E. 3, 17, 34, 46, 79
Gardner, E. D. 115, 135
Gardner, J. H. 3, 11, 99, 153
Gardner, W. M. 94, 153
Garfias, V. R. 3, 99, 140, 153
Garrison, F. Lynwood 3, 79, 82, 137, 219, 225, 226
Gates, A. O. 160, 203, 226
Gawthrop, R. M. 4, 82, 99, 105, 107, 108
Geijer, Per 3, 12, 54
Geismer, H. S. 95, 135
Geliens, G. A. 21, 29, 38, 165, 172, 188
George, Glen 79, 129
George, H. C. 3, 12, 47, 49, 50, 51, 77, 115, 120, 129, 131, 160, 164, 169
Gerold, Oscar 50, 187, 214
Gerry, G. N. 26, 28, 32, 34, 40, 44, 46, 48, 49, 52, 71, 153
Getzner, A. 14, 113, 172, 205
Gibbs, C. H. 88, 147
Gibson, G. H. 126
Gibson, T. S. 79, 82, 131, 142
Gilbert, B. 126
Gilbert, L. D. 104, 106, 142, 144, 150, 201, 226
Gillett, H. W. 79, 182, 187
Gilliceaux, M. 124, 129
Giolitti, Federico 66, 215
Girts, G. H. 3, 106, 108, 142
Gleditsch, Ellen 12
Glenn, L. C. 3, 98
Goldingham, A. H. 198
Goodenough, G. A. 199, 226
Goodrich, R. R. 38, 179, 188, 195
Goodwin, Hall L. 142
Goodwin, L. Hall 34, 46, 124, 131, 160
Gosrow, R. C. 57, 62, 179
Could, G. B. 99, 176
Gould, R. A. 21, 47, 187, 209, 214
Grady, W. H. 79, 90, 125, 137, 204
Graf, S. H. 66, 212, 215
Graham, H. R. 12, 35, 129
Graham, Thomas 17, 28, 80, 144
Grammer, F. L. 59, 77, 140, 204
Grant, U. S. 6, 24, 71, 73, 80, 87, 217
Gray, F. W. 79, 92, 153
Gray, J. H. 57, 62, 179
Greaves-Walker, A. F. 104, 105
Gregory, H. E. 4
Green, Harold 131
Green, Joe 66, 127, 192, 199, 201
Green, P. E. 120
Greenan, J. O. 117
Greer, G. E. 89, 89, 137
Griffiths, David 89, 149
Guardiola, Ricardo 4, 12, 33, 49, 50, 149, 188
Gullachsen, B. C. 17, 107, 129, 134
Guy, A. E. 126, 219
Guye, P. A. 172, 175
Guzman, J. 38, 45, 61, 68, 175, 176
Gwosdz, J. 200

H

Haag, Edward 169, 170, 225
Haanel, B. F. 96, 206
Haanel, E. 177
Haas, Frank 80
Hackett, D. A. 128, 212
Hadow, P. 148
Haeger, Dorsey 4, 99, 103, 177
Haggen, E. A. 4, 17, 35, 38, 115, 119, 134, 135, 142, 153, 170, 192, 219
Halbaum, H. W. G. 80, 84, 131, 145
Haldane, J. S. 87, 88, 147, 206
Haley, C. S. 21, 107, 120, 133
Hall, A. L. 4, 23
Hall, Frank 89, 145, 148
Hall, H. H. 17, 133, 134, 204
Hall, R. D. 80, 129, 137
Hamilton, E. M. 29, 166, 170, 172
Hamilton, Fletcher 42, 102, 103, 104, 108, 153, 217
Hamman, W. D. 4, 12, 14
Hammond, John Hays 77, 217, 227
Hammond, W. P. 194, 203
Hance, J. H. 14, 173, 177
Hanchett, F. B. 85, 140, 142
Hancock, R. T. 117, 152
Hanemann, H. 60, 66, 68, 196, 215
Hanna, W. C. 104, 189, 214
Harbort, E. 12, 14, 113
Harder, E. C. 4, 23, 54, 70, 110
Harding, James E. 137
Harris, E. G. 128, 212
Hart, Edward 117
Hart, G. S. 4, 23
Hart, W. C. 54, 57, 124, 128, 142
Hartmann, M. L. 71, 206
Haseza, L. F. 195
Hauer, D. J. 204, 225, 227
Hauger, L. G. 90, 142, 201
Hawkins, J. C. 199
Hawley, R. S. 201, 204

Hay, T. R. 90, 131, 192
Hayden, H. H. 17, 26, 70, 92, 102, 111, 153
Hayden, J. E. 54, 120, 124, 127, 142, 153
Hayes, A. O. 12, 14, 54, 173
Hays, J. W. 97, 199
Heald, K. C. 9, 99, 100
Hebbard, James 50, 61, 162, 210
Heidelberg, F. M. 35, 131, 197
Heikes, V. C. 17, 26, 28, 32, 35, 42, 44, 48, 49, 52, 153
Heilbron, I. M. 174
Henderson, C. W. 17, 26, 28, 32, 35, 42, 44, 48, 49, 52, 153
Hennen, R. V. 4, 82, 99, 105, 107, 108
Henry, G. J. 195
Henshaw, F. F. 195
Herbert, E. M. 164
Heriot, E. M. 4, 50, 113, 115, 119
Hermanns, Hubert 62, 65, 182, 215
Hershey, O. H. 4, 23, 40
Herz, Nathaniel 30, 167, 210
Hetzel, F. V. 95
Hewett, D. F. 70, 153
Hibbard, H. D. 182
Hicks, W. B. 112, 113, 206
Higgins, Edward 116, 129, 142
Higgins, W. C. 4, 17, 28, 31, 35, 44, 47, 49, 51, 104, 105, 116, 123, 127, 131, 219, 222
Hill, James M. 4, 12, 17, 28, 31, 32, 33, 35, 42, 44, 48, 77, 109, 112, 137, 153, 177, 206, 219
Hills, R. C. 4, 12, 82
Hinnard, H. D. 66
Hlebnikoff, K. I. 17, 133, 204
Hodnette, M. G. 148, 187, 199, 209
Hoefinghoff, H. 60, 182
Hoffman, A. 50, 62, 109
Holford, W. G. 17, 138
Holgate, T. 105, 188
Holland, L. F. S. 217
Hollings, Harold 91, 206
Hollister, S. E. 14, 73, 148, 152, 164, 176, 182, 196, 203
Holmes, J. A. 21, 31, 47, 187, 209, 214
Holt, R. R. 142
Holvek, J. E. 126
Hornold, W. L. 4, 17, 18, 116, 119, 142, 220
Hopkins, P. E. 4, 23, 116, 220
Hornaday, W. D. 97
Hoskin, A. J. 120, 192
Howard, L. O. 18, 25, 28, 30, 31, 35, 38, 44, 47, 50, 131, 153, 161, 162, 164, 192, 204, 225
Howe, Ernest 12, 14, 40, 74
Howe, J. F. 131
Howell, R. W. 4, 9, 98, 100, 103, 116
Howell, S. M. 198, 220
Howell, Spencer P. 123, 212
Hubbard, C. L. 199, 201
Hudler, D. J. 85, 91
Huels, F. W. 12, 96, 97, 116, 200
Humes, J. 131, 192, 197, 204
Hunt, W. F. 5, 12, 61, 65, 114, 212, 215
Huntley, L. G. 5, 98, 100, 102, 153, 220
Husband, J. 227
Hyde, M. L. 18, 80, 84, 87, 124, 131, 142, 201

I

Ibbotson, F. 68, 173, 177
Imoff, W. G. 57, 182
Ingalls, W. R. 50, 77, 183, 217, 227
Ingham, W. 18, 199
Irmann, R. 74, 77, 175, 183, 206, 215
Izod, E. G. 126

J

Jackson, W. B. 195, 219
Jacobs, E. 26, 32, 42, 44, 48, 80, 92, 153
Jakins, G. F. 117
James, W. H. T. 73, 161, 164
Jamieson, G. S. 173, 177
Jane, W. H. 147
Janssen, W. A. 57, 60, 183
Jarman, A. 5
Jeffries, Z. 77, 206
Jevons, H. S. 80, 92, 153
Jimenez, Carlos P. 18, 26, 33, 42, 45, 48, 49, 52, 69, 71, 94, 98, 102, 113, 144
Johns, C. O. 168, 174, 178
Johnson, B. L. 5, 6, 12, 18, 23, 24, 31, 40 41, 42, 71, 73, 80, 83, 170, 217
Johnson, Ernest 41, 68
Johnson, F. S. 85, 94, 95, 160
Johnson, H. L. 220
Johnson, J. E., Jr. 57, 60, 71, 97 173, 183, 186, 199, 210, 214
Johnson, N. C. 106, 107, 206
Johnson, R. A. A. 14, 119
Johnson, R. G. 80, 84, 124, 131
Johnson, R. H. 102, 116
Johnston, John 5, 14
Jones, B. E. 134
Jones, C. C. 5, 54, 60, 153, 169, 183
Jones, E. L., Jr. 5, 27, 31, 40, 47, 116, 133, 134, 220
Jones, F. A. 5, 18, 23, 31, 40
Jones, H. C. 172, 175, 209
Jones, H. S. 198
Jones, J. L. 68, 70
Jones, L. M. 87
Jones, O. D. 195
Jones, S. A. 138, 145
Jones, W. R. 5, 73
Jonson, Ernest 206
Josten, L. J. 65, 127
Juretzka, Franz 50, 53, 76, 183

K

Kalmus, H. T. 68, 75, 175, 207
Katz, F. J. 109, 110, 113, 153, 154
Keely, J. 5, 90, 105, 148, 199, 227
Keeney, R. M. 21, 30, 142, 167, 169, 179, 203
Kellogg, L. O. 120
Kemp, J. F. 5, 12, 14, 55
Kenna, C. T. 12, 40, 72
Kenney, E. F. 63, 183
Kent, Wm. 199
Kershaw, J. B. C. 85, 144, 199
Key, A. Cooper 25, 117
Kikkawa, H. 66, 69, 71, 215
Kindle, E. M. 5
King, Oliver 5, 116, 138, 140, 148, 220
King, Rowland 25, 38, 177
Kinnison, C. S. 105, 110, 209
Kithil, K. L. 77, 119
Kline, A. H. 77, 206
Klotz, H. 183
Klugh, B. G. 57, 60, 78
Kneeland, F. H. 80, 133
Knight, C. W. 6, 7, 24, 31, 41, 55, 74, 109, 154
Knittel, C. A. 74, 75, 173, 177
Knoph, Adolph 5, 12, 23, 33, 76, 78, 116, 220
Knothe, Walter 104, 134, 173
Koenig, Adolf 111
Koneczny, Franz 126
Kotze, R. N. 5, 76, 207
Kranz, W. G. 58, 65, 175, 183
Kratz, A. P. 199, 211
Krusch, P. 5, 82
Kuhl, Hans 104, 134, 173

L

Ladreda, J. M. F. 38, 45, 61, 68, 175, 176
Lakes, Arthur 5, 126, 116
Lakes, Harold 117, 138
Lamb, M. R. 35, 111, 217
Lang, A. 3, 111
Langenberg, F. C. 63, 196, 215
Langsworthy, R. A. 97, 199
Lankton, C. S. 66, 194
Larcombe, C. O. G. 5, 12, 23
Larson, C. L. 38, 168, 204
Lass, W. P. 21, 30, 167, 179
Lathe, Frank E. 38, 173, 183, 210, 214
Lauchli, E. 5, 120, 127
Lawrie, W. W. 16, 87, 124, 129, 138, 146

Lay, Douglas.....21, 180
Ledeboer, J. H.....199
Lee, Willis T.....6, 140, 227
Leeds, M. E.....63, 183, 207
Legrand, Chas.....
.....126, 127, 128, 192, 197, 199, 211
Leith, C. K.....6, 12, 14, 55, 173
Lemoine, J.....62, 215
LeRoyal, P.....6, 98
Lesher, C. E.....91, 92, 95, 154, 207
Leslie, E. H.....50, 167, 169, 183, 204
Leverett, Frank.....6, 23, 107, 217
Levi, M. G.....114, 173, 177
Levin, N. D.....80, 88, 128, 146
Levings, J. H.....73, 188
Lewenheilm, H.....120, 123, 127
Lewis, J. H.....50, 164, 194
Lewis, J. V.....14, 173
Lewis, R. S.....18, 142, 170
Liang, H. T.....69, 183
Lincoln, F. C.....
.....6, 73, 138, 154, 170, 183, 204, 220
Lind, S. C.....72, 76, 169, 177, 184, 188
Linden, H. E.....25, 195, 220
Lindgren, W.....
6, 8, 13, 14, 15, 23, 24, 25, 31, 41, 47, 55
Lindt, V.....50, 114, 184
Lineham, W. J.....117
Linke, H. A.....125, 135
Lloyd, G. C.....66, 222
Lodge, G. A.....88, 89, 123, 125, 128
Lohe, Theodore.....65
Lohmann, K. B.....90, 147, 149
Lohse, U.....65, 107
Lomax, C. S.....94, 95
Lomax, James.....15, 91
Lombardi, M. E.....102, 154, 204, 225
Loughlin, G. F.....
.....6, 106, 107, 108, 111, 112, 154, 173
Low, S. V. F.....18, 21, 135, 167, 169, 204
Lowell, F. L.....6, 26, 43, 95, 100, 138
Lucke, C. E.....198
Lunt, H. F.....6, 110
Lupton, C. T.....6, 80, 82, 116
Lymn, A. H.....94, 200, 220
Lynch, T. D.....61, 212, 215

M

Macaulay, D. A.....6, 85, 131
Maccall, W. T.....196
Maccoun, A. E.....58, 95, 184, 210
Macdonald, J. A.....25, 157, 116, 217
Macleod, W. A.....138
MacMichael, R. F.....102, 170, 212
Macqueen, W. P. O.....123, 173
Manitus, Otto.....175
Mann, A. S.....97, 207
Manz, H.....38, 74, 168, 184
Marquand, A. B.....101, 173, 184
Marquard, J. D.....123, 146
Marshall, R. B.....117
Martin, G. C.....
6, 24, 31, 35, 41, 71, 73, 80, 83, 123, 173, 217
Mason, F. H.....222
Mather, T. A.....86, 89, 128, 192
Mathewson, E. P.....38, 91, 162, 184, 186
Matson, G. C.....6, 13, 15, 114, 133, 164, 177
Mattin, Theodore.....222
Mavor, Sam.....85, 86, 120, 197, 211
Maxwell-Lefroy, E.....6, 71, 225
Mayer, Ralph W.....88, 131, 142, 146
McAfee, A. M.....94, 101
McBride, Richard.....18, 24, 26, 28, 31,
25, 38, 43, 45, 48, 49, 50, 52, 80, 92, 145, 170
McCale, C. H.....83, 130, 141
McCarty, E. P.....55, 57, 70, 154
McCaskey, H. D.....6, 76, 154
McCauley, W. J.....21, 170, 188
McClave, J. M.....162
McCrystle, J.....88, 144
McCullough, Ernest.....117
McDaniel, A. B.....107, 207
McDonald, J. A.....116, 118, 211
McDonald, P. B.....
.....41, 55, 120, 125, 131, 138, 149, 227
McFarland, J. R.....121, 127, 135, 211
McGrigor, C. D.....173, 177, 195, 201
McIntosh, F. K.....55, 121, 125, 135
McKee, W. S.....63, 66, 70, 138, 215
McKenna, C. F.....105, 106
McKenna, R. C.....71
McKinley, J. C.....140
McKnight, W. M.....58, 180
McLain, R. H.....65, 196
McLaren, Alex.....21, 161, 167
McLaughlin, R. P.....98
McLeish, John.....63, 154
McLeod, W. A.....225
McNeil, J. C.....91, 150
McPhee, Richard.....84, 86, 142, 197
McWane, R. C.....63, 216
Mead, W. J.....6, 12, 14, 55, 173
Meade, N. G.....105, 194
Means, C. M.....84, 131, 138, 192, 194
Megraw, H. A.....30, 167, 170, 189
Megson, J. E.....198
Meguro, S.....87, 144
Meinke, Fred, Jr.....170
Meizner, O. E.....6, 134, 204, 227
Mellor, E. T.....6, 24
Meneghini, D.....41, 51, 68, 207
Merica, P. D.....56, 68, 73, 196, 199, 211
Merrin, A. H.....18, 133, 134, 154
Merwin, H. E.....7, 15, 42, 173, 177
Meuskens, C.....112, 184, 186
Middleton, A. E.....6, 135, 142, 192, 197
Middleton, J.....104, 105, 106, 107, 110, 154
Mikesell, H. S.....88, 146
Milholland, R. A.....58, 66
Miller, A. M.....6, 83, 119
Miller, J. M.....66, 196
Miller, W. G.....
.....6, 7, 24, 31, 41, 55, 68, 74, 109, 154
Mills, A. P.....66, 68, 107
Mills, M. H.....86, 94, 200, 201
Mills-Davies, J. E.....7, 100, 116
Minning, H. D.....75, 78, 177
Mitke, C. A.....35, 129
Mitman, C. W.....92, 94, 227
Moffit, Fred H.....7
Moir, James.....138, 147, 148
Mooney, J. D.....142, 143, 170, 211
Moore, F. F.....98
Moore, R. B.....72, 76, 169, 184, 188
More, J. T.....35, 147
Morleck, A. G.....130, 212
Morrison, W. L.....58, 65, 180
Moses, A. J.....15, 110, 207
Moses, F. G.....38, 116, 121, 122
Mottram, T. H.....80, 144, 147, 154
Mrvik, F.....138, 144
Mueller, W. A.....38, 94, 162, 207, 216
Muir, D. D.....21, 122, 177, 207
Muirhead, A. B.....138, 192
Müller-Herrings, P.....7, 83, 92, 154
Muntz, G.....63, 204
Murray, R. M.....7, 35, 41, 130, 138
Mutscheller, A.....173, 180, 207

N

Nason, Frank L.....7, 51
Naderhoff, A.....95
Nead, J. H.....63, 216
Neilson, O.....38, 43
Netland, L.....86, 84, 85, 86, 131, 195
Nevius, J. N.....7, 18, 24, 133
Newell, F. H.....227
Newman, M. F.....199
Newman, W. E.....184, 214
Nickel, F. F.....127, 199
Nickles, J. M.....7, 227
Nielsen, O.....154
Noland, Lloyd.....66, 90, 149
Norman, Fred.....80, 84, 85
Norris, D. H.....162, 220
Norris, Geo. L.....63, 68
North, H. B.....15, 173
Northrup, J. D.....101, 103, 155
Norton, T. H.....112, 154, 204
Noth, Julius.....7, 98, 100, 102, 121, 154

Notman, Arthur.....35, 116, 121, 136
Nulsen, J. C.....63, 216, 220

O

Oberfell, G. G.....87, 103, 176, 206
Oberlehrer, H. W.....7, 83
O'Brien, T. S.....21, 164, 167, 170
Oebbeke, K.....78, 121, 155
Offerhaus, O.....38, 162, 184, 186, 188, 200
Ohren, Geo. A.....41, 195, 196, 227
Oke, A. L.....25, 122
Olson, C. E.....55, 94, 95, 207
Osborne, N. S.....182, 212

P

Pack, R. W.....1, 98, 99, 118
Paine, E. B.....222
Palmer, L. O.....21, 25, 121, 123, 125, 134, 160, 161, 164, 165, 171, 204
Panepps, J. S.....227
Park, James.....177
Parker, E. W.....97, 155, 168, 204
Parker, L. H.....199
Parmelee, H. C.....21, 30, 122, 136, 138, 161, 164, 167
Parr, S. W.....68, 94, 95, 207
Parsons, C. L.....72, 76, 169, 184, 188
Parsons, L. A.....21, 122
Paters, Franz.....38
Patterson, J. H.....31, 116, 227
Paul, J. W.....125
Payne, F. R.....80, 91, 207
Payne, J. H.....111, 119, 138, 189
Pearl, H. I.....66, 127, 192, 199, 201
Pearson, J. C.....105, 177, 211
Pearson, Ralph.....21, 184, 189
Peck, W. R.....7, 83, 92, 155, 217
Pence, W. D.....118
Percival, J. B.....7, 18, 24, 155, 220
Perkins, F. C.....195
Pero, J. P.....63, 216, 220
Perry, R. W.....18, 134
Peters, Franz....22, 30, 51, 167, 180, 184, 210
Peterson, Olaf.....180, 188
Pettis, E. S.....22, 165, 167
Pfiffner, E.....131, 192
Phalen, W. C.....75, 109, 112, 113, 114, 155
Phelps, C. C.....121, 197
Philips, J. D.....118
Philips, Stuart C.....85
Phillips, F. C.....173, 227
Phillips, W. B.....76, 92, 98, 155, 217
Pickard, J. A.....61, 177
Pierce, C. H.....134, 212
Pietrusky, K.....72, 76, 155
Pilz, A.....7, 17, 76
Pirsson, L. V.....7
Pollard, W.....9, 13, 58, 83, 178
Poole, G. G. T.....125, 132, 146
Pope, D. E.....18, 25, 136, 167, 217
Pope, F. J.....39, 189
Posnjak, E.....7, 15, 42, 173, 177
Poter, J. J.....106, 200
Pradel.....65, 189
Pratt, W. E.....7, 13, 22, 30, 55, 94, 98, 100, 103, 116, 119, 161, 167, 174
Preston, E. T.....121
Price, W. Z.....80, 127, 128, 227
Probert, F. H.....42, 225
Proctor, C. L.....51, 171, 192, 194
Prosser, W. C.....22, 162
Przyborski, M.....92, 123, 155
Pulsifer, H. B.....51, 184, 214
Purington, C. W.....7
Putnam, W. S.....172, 175, 209
Pyne, F. R.....175

Q

Quine, J. T.....66, 144

R

Raefler, F.....7, 13, 55, 121
Ralston, O. C.....22, 162, 167, 174, 207
Ramp, H. M.....63
Randall, M.....109, 174, 177
Rangoon, F. G. S.....1, 99, 120
Ransome, F. L.....7, 13, 76
Ravicz, L. G.....7, 13, 15, 31, 174, 207
Read, Thomas T.....8, 39, 162, 189, 204
Redwood, B.....8, 98, 116, 121, 207
Reedy, J. H.....32, 175, 212
Reid, J. C.....217
Reid, J. H.....18, 26, 155
Reid, Thomas T.....35
Reigart, J. R.....125
Revett, B. S.....163
Reynolds, H. B.....86, 204, 211
Rice, George S.....87, 88, 95, 146, 207
Richard, L. M.....8, 13, 15, 41
Richards, Frank.....197
Richards, J. W.....75, 196
Richards, R. H.....161, 165, 171, 220
Rickard, T. A.....8, 18, 78, 121, 130, 136, 138, 155, 163, 207, 210, 220, 225, 227
Ricks, E. C.....95
Rider, J. H.....132, 192
Ries, Heinrich.....8
Rindsfoos, C. S.....204, 227
Rippert, P.....47, 51, 214
Rittman, Walter F.....100, 101, 177
Robbins, P. A.....8, 13
Robertson, G. A.....161, 210
Robinson, W. L.....91
Roby, I. G.....146, 150
Roche, H. M.....55, 138, 143, 192, 217
Rodenhauser, W.....63, 184
Rodgers, M. K.....161, 207
Rogers, E. D.....63, 68, 220
Rogers, R. F.....8, 13, 55, 116, 217
Rogers, T. J.....127
Romero, C. L.....8, 55, 72, 103
Rose, T. K.....8, 18, 22, 25, 33, 161, 167, 168, 177, 180
Rosenblatt, G. B.....132, 192
Ross, C. P.....8, 15, 55
Rouillard, A. P.....126
Rousch, G. A.....55, 57, 63, 69, 70, 75, 78, 109, 155, 165
Rowe, J. P.....8, 83, 197
Royce, Stephen.....125, 138
Ruff, Otto.....61, 63, 96, 181, 216
Ruhl, Otto.....52, 220
Rush, W. W.....222, 227
Rutledge, J. J.....80, 125, 145
Rutledge, Walton.....88, 92, 155, 220
Ryba, Gustav.....89, 129

S

Saint-Smith, E. C....8, 17, 15, 24, 73, 122, 134
Salcedo, Severo.....8, 112
Sale, P. D.....31, 172, 206, 215
Salinger, H.....163
Sargent, G. W.....63, 66, 174
Sauerman, H. B.....107, 133
Saunders, E. J.....8, 80, 83, 227
Sauveur, A.....66, 216
Scalione, C. C.....109, 174, 177
Schaefer, C. C.....72, 76, 169, 184, 188
Schaus, O.....55
Schlippenbach, F.....174, 184
Schmerber, H.....123, 213
Schneider, G. W.....155
Scholz, Carl.....222
Schonebeck, J. Furer.....113, 174
Schrader, F. C.....8, 28, 220
Schuchert, Charles.....7
Schuyler, A. H.....58, 60, 208
Schwarz, E. H. L.....13, 24
Scott, W. W.....111, 172, 176
Seaver, K.....94, 95, 104, 113, 188, 207
Seelenfried, L.....100
Segall, Julius.....15
Seibert, F. M.....103, 176
Sharwood, W. J.....22, 30, 76, 167, 177

Sheldon, T. H.....127, 128, 136
Shellshear, W.....163, 171, 214
Sherman, G. F. G.....35, 132, 136, 143, 192, 195, 211
Shockley, W. H.....148, 227
Sim, J.....91, 122, 177, 208
Siebenthal, C. E.....8, 13, 47, 49, 51
Siegal, Henry.....189
Simmersbach, B.....55, 155
Simmersbach, O.....63, 96, 211
Simmons, Jesse.....8, 22, 72, 122, 143, 161, 167, 171, 214
Sinclair, J.....22, 133, 214
Sirovich, G.....189
Skillman, V.....68, 78, 208
Sligh, W. H.....105, 177, 211
Smallwood, J. C.....201
Smith, E. A.....22, 30, 33, 160, 174, 177
Smith, George Otis.....18, 25, 26, 28, 32, 36, 43, 45, 48, 49, 52, 55 63, 69, 71, 72, 76, 80, 92, 98, 102, 155, 227
Smith, Howard D.....19, 26, 156
Smith, H. H.....30, 163
Smith, P. H.....198
Smith, P. S.....8
Smith, R. R.....86, 192
Smith, Ralph W.....163, 210
Smith, W.....76, 114, 178
Smith, Warren D.....8, 24, 105, 106, 108, 114
Snedaker, E. G.....121
Snelling, W. O.....101
Snyder, F. T.....63, 169, 180, 204
Snyder, W. T.....132, 192
Sparkes, G. M.....19, 36
Spaulding, C. F.....167, 210
Spaulding, M. B...19, 26, 28, 32, 127, 156, 220
Spearman, Charles.....8, 19, 24, 116. 140
Spencer, H. H.....123, 208
Spilsbury, E. G.....47, 52, 227
Spriggs, A. E.....42, 123, 125, 145
Stadler, H.....161, 208
Stahl, W.....30, 174
Stansbie, J. H.....189
Stansfield, Alfred.....49, 64, 180, 184, 205
Stansfield, E.....94
Stark, C. J.....56, 72, 140, 190, 220
Stauffer, C. R.....8
Stead, W. T.....61, 208, 216
Steelman, J.....84, 140
Sterrett, D. B.....9, 110, 111, 156
Stevens, T. B.....22, 161, 165, 168, 178, 210
Stevenson, C. S.....66, 148, 222
Stevenson, John.....88, 125, 146, 193, 208
Stewart, E. P.....84, 91
Sticht, R. C.....112, 189
Stickney, A. W.....9, 17, 41, 112
Stobie, Victor.....64, 180
Stoddard, J. C.....55, 138, 143, 192, 217
Stone, F. L.....132
Stone, Ralph W.....140, 227
Stone, S. R.....19, 138, 143, 199
Storen, R.....39, 58, 75, 112, 124, 184
Stork, J. C.....60, 64, 187, 208
Storms, W. H.....136, 225
Strahan, Aubrey.....9, 13, 83, 178
Street, A. L. H.....217
Streeter, R. L.....97, 198, 205
Stromboli, A.....60, 65, 184
Suplee, H. H.....201
Swain, G. F.....201
Swinden, Thomas.....65, 66, 114
Sykes, Wilfred.....36, 132, 193
Sylvester, G. E.....36, 43, 92, 106, 156
Szasz, Ernest.....61, 178

T

Taffanel, M. J.....88
Taggart, Arthur F.....160, 210
Tarr, W. A.....108, 208
Taylor, Frank B.....6, 23, 107, 217
Taylor, M. T.....72, 74, 165
Taylor, Roy.....134, 211
Taylor, S. A.....91, 217
Tenney, E. H.....199, 201, 212
Thompson, J. W.....148, 217
Thornhill, E. B.....22, 165, 174
Thornton, W. M.....126, 193
Thrasher, G. M.....61, 208, 216
Toll, R. H.....25, 32
Tonamy, C. H.....64, 216
Torrese, D. M.....96, 156
Touceda, E.....64, 208, 216
Townsend, David.....58, 184, 212
Trautschold, R.....86, 91, 97, 200, 212
Trautwine, J. C.....118, 228
Trevor, James.....25, 149, 217
Tucker, W. B.....9, 26, 32, 43, 106, 139, 156
Tupper, C. A.....36, 39, 86, 125, 132, 133, 143, 171, 184, 185, 193
Turner, F. M., Jr.....9, 15, 72, 174, 185, 220
Turner, S. G.....217
Twelvetrees, W. H.....9, 83
Twyford, H. B.....228
Tyrrell, J. B.....9, 24

U

Udden, J. A.....9, 111
Uhler, J. L.....64, 208

V

VanEpps, J. S.....91, 217
Vanderhof, H.....64
Vaughan, J. F.....195, 196, 200
Verne, C. E.....45, 49, 221
Vogel, J. P.....85
Volker, H. J.....137
VonBernewitz, M. W.....168
VonBorries, W. J.....9, 81, 143
Vosmer, A.....42, 69, 216
Vickers, C.....42, 49, 51, 68, 69, 71, 74, 75, 146, 147, 180, 185, 208, 222
Viehoever, A.....168, 174, 178

W

Wagenmann, Karl.....75, 178
Walker, H.....81, 126, 145, 156
Walker, T. L.....9, 15, 41, 75
Waller, R. F.....118
Wang, Y. T.....9, 13, 51, 174, 208
Walsh, J. J.....129, 174
Warford, N. L.....39, 97, 161, 186
Washburn, E. W.....174
Waterbury, L. A.....228
Watkins, J. H.....9, 114
Watson, T. L.....8
Watson, W. J.....107
Watts, O. P.....175
Wauchope, A...19, 161, 165, 166, 168, 193, 198
Weaver, Charles E.....9, 100, 103, 119
Webber, R. G.....63, 196, 215
Wedderburn, A.....39, 174, 178
Wegemann, C. H.....4, 9, 98, 99, 100, 103, 116, 121, 221
Weinbren, M.....143, 187, 210
Welbourn, B.....39, 180
Weld, C. M.....9, 10, 13, 56
Wells, A. E.....190
Wells, John.....10, 100, 118
Wells, R. C.....10, 13, 174, 210
Wenzel, Ernst.....81, 96, 156, 168
Wepfer, G. W.....19, 217
West, T. D.....65
Westcott, —.....200
Westland, C. R.....118
Weston, F. M.....19, 56, 121, 123, 139, 197
Whetzel, J. C.....106, 200
Whitcraft, L. N.....106, 107
White, B. S.....39, 61, 178
White, C. H.....178, 190
White, H. A.....161, 168, 171, 210
White, J. H.....147, 149
White, J. Walwyn.....143
Whitman, A. R.....10, 15, 24

Whitsit, —..... 172
Whittome, Arthur C.....89, 129, 213
Wig, R. J.....104, 105, 213
Wilcox, A. L..... 195
Wille, H. V.....64, 208, 216
Williams, G. F....110, 128, 130, 139, 143, 221
Williams, G. M.....104, 213
Williams, M. J.....85, 94, 96, 160
Williams, M. Y..... 10
Williams, R. Y.....90, 145, 146
Williams, W. C..... 149
Willoughby, A. A.....66, 146, 150
Willis, C. F..... 222
Wills, W. H.....58, 60, 180, 208
Wilson, E. B.....86, 90, 97
Wilson, F. J..... 174
Wilson, L. C.....66, 68, 216
Wilson, Roy.....8, 83
Wilson, W. M..... 228
Wilson, W. O.....127, 212
Winmill, W. F.....88, 129, 143, 146, 193, 208
Wittich, L. L.....47, 48, 52, 156, 217
Wolf, J. H. C.....102, 156
Wolf, W.....132, 193
Wolff, J. F.....10, 13, 56, 116, 118, 121, 122
Wood, B. D..... 135
Wood, G. W.....22, 30, 168, 169, 214
Woodworth, R. B.....99, 121, 130, 136, 221
Worcester, S. A.....22, 168, 214
Wright, Clarence A.....
.....10, 121, 124, 125, 127, 130, 132, 143
Wright, C. W.....10, 24, 32,
45, 47, 51, 145, 149, 156, 165, 194, 205, 217
Wright, Charles Will.....41, 56, 74, 119
Wright, Clarence W.....49, 51
Wright, W. H.....19, 135
Wust, F.....60, 64, 187, 208
Wysor, R. J.....58, 185, 210

Y

Yale, C. G.....26, 28, 32, 36,
43, 45, 47, 48, 49, 52, 111, 114, 156, 218
Yensen, T. D.....64, 69, 196, 216
Young, C. M.....86, 200

Z

Zapffe, Carl.....56, 221
Zern, E. N.....81, 222
Zevallos, G. D.....105, 174, 178
Ziegel, Henry.....61, 69, 106, 178, 214
Ziegler, Victor.....10, 112, 119
Zimmer, E. B.....77, 206

Subject Index

A

Abrasives 109
Accidents in Mines and Mills....144
Accounts 150
Acetylene Mine Lights (see under Lighting) 125
Acids (Mineral) 109
Adits (see under Tunnels)....127
Agitation (see under Cyaniding)....166
Alkalis 109
Alloys (Non-ferrous) 68
Aluminum 75
Alums (see under Salines)....113
Amalgamation 165
Analysis 175
Anthracite (see under Coal).... 79
Antimony 69
Arsenic 109
Asbestos 109
Assaying (see also under Gold, Silver, Copper, Lead and Zinc....175

B

Ball Mills (see under Crushing)....160
Barytes 109
Bauxite 109
Belts and Belting (see under Haulage and Transport) 83, 141
Beryllium 78
Bins and Pockets (see under Storage).143
Bismuth 69
Bitumens 103
Bituminous Coal (see under Coal).... 79
Blast Furnaces 57, 181
Blast-Hole, Drilling (see under Drilling) 119
Blasting 119
Blowers and Fans (see under Ventilation) 128
Boilers and Feed (see under Steam)...198
Bookkeeping 150
Borax (see under Potash)....112
Boring 119
Breakers (see under Coal Preparation). 84
Brick 104
Briquetting 168
Bucket Elevators (see under Transport) 141
By-products 93

C

Cables and Cableways (see under Haulage) 83
Cadmium 53
Cars and Accessories (see under Transport) 140
Cement 104
Production 151
Centrifugal Pumps (see under Pumps)..126
Ceramics 105
Charging Furnaces 57, 181
Chemistry 172
Chilean Mills (see under Crushing)....160
Chlorination 168
Chromium 69
Churn Drilling (see under Drilling)....119
Clays 105
Coal—
Accidents 89
Blasting 87
Briquetting 168
By-products 93
Conveying 83
Dust 87
Economics of Mining.... 90
Electricity in Mines....96, 191
Coal (continued)—
Explosions 87
Explosives 87
Fields 79
Fire Damp 87
First Aid 88
Gases 87
Geology 1, 82
Handling 84
Haulage 83
Hoisting 84
Labor 89
Lighting 88
Management 89
Marketing 84
Mechanical Cutters 85
Mine Fires 87
Mines and Mining.... 79
Mining Accounts 150
Miscellaneous 90
Power in Coal Mines.... 85
Preparation 84
Production 92, 151
Rescue and First-Aid.... 88
Safety 88
Sanitation 88, 147
Screening (see under Preparation).... 84
Signalling 88
Sociological 89
Storage 84
Testing 84
Tipples 84
Transport 83
Ventilation 88
Cobalt 75
Coke 95
Production 151
Combustion Engines 198
Compensation of Workmen (see under Labor) 89
Compressed Air 197
Concentration 164
Concrete 106
Production 151
Conservation 218
Conveyors 141
Copper—
Electricity in Mills and Smelters....194
Electricity in Mines....191
Geology 40
Leaching 37
Milling 37
Milling Costs 168
Mine Accounts 150
Mines and Mining 34
Mining Costs 135
Miscellaneous 41
Production 42, 151
Refining 37
Smelting 37
Core Drilling (see under Drilling)....119
Costs—
Milling 168
Mining 135
Miscellaneous 202
Crushing 160
Cryolite 114
Cutters, Mechanical Coal 85
Cyaniding 166

D

Dams (see under Mine Water)....128
Decantation (see under Cyaniding)....166
Diamond Drilling 119
Diamonds (see under Gems)....110
Distillation (see under Petroleum)....101
Dolomite 114
Drafting 117
Drainage (see under Mine Waters)....128

Dredges and Dredging.....132
Drifts and Drifting (see under Sinking and Driving).....124
Drills and Drilling.....119
Driving.....124
Dust—
Coal.....87
Flue.....213
Mine.....213
Dynamite (see under Explosives).....123

E

Economics of Coal Industry.....90
Educational.....222
Electric Furnaces.....57, 181
Electric Motors.....191
Electric Smelting (see under Electrometallurgy).....179
Electricity—
Blasting.....119
General.....195
Haulage.....130
Hoisting.....130
Hydroelectric.....194
In Mills and Smelters.....194
In Mines.....191
Electrochemistry.....175
Electrocyaniding.....166
Electrolysis.....179
Electromagnetic Ore Dressing.....179
Electrometallurgy.....179
Electrosiderurgy.....179
Electrostatic Ore Dressing.....179
Elevators (see under Conveying).....141
Engines—
Combustion.....198
Gas.....200
Gasoline.....198
Oil.....198
Producer Gas.....200
Steam.....198
Excavators.....133
Exploders.....123
Explosions in Coal Mines.....87
Explosives.....123

F

Falls of Ground (see under Supports).....129
Fans, Ventilating (see under Ventilation).....128
Faults (see under Geology).....1
Feldspar.....110
Fertilizers.....110
Filters (see under Cyaniding).....166
Financial.....225
Fire Damp.....87
First-Aid.....88, 147
Flotation.....162
Flue Dust (see also under Iron and Steel).....213
Fluorspar.....110
Folds (see under Geology).....1
Fuel Briquetting.....168
Fuels.....79
Miscellaneous.....96
Fullers Earth.....110
Fumes.....213
Furnaces—
Charging.....57, 181
Electric.....57, 181
Fume, Gas and Flue Dust.....213
Iron and Steel.....57
Slag.....213
Walls and Lining.....187
Fuses.....119

G

Gages, Water (see under Pumps).....126
Gas and Flue Dust.....213
Gas Engines.....200
Gas, Natural.....103
Gas Producers.....200
Gases, Mine.....187
Gasoline Engines.....198
Gems.....110
General Miscellany.....203
Generators (see under Electricity).....191
Geology, Mining.....1
Gold—
Assaying.....20
Amalgamation.....20
Electricity in Mills.....194
Electricity in Mines.....191
Gold Fields.....16
Geology.....23
Metallurgy.....20
Milling.....20
Milling Costs.....168
Mining.....16
Mining Accounts.....150
Mining Costs.....135
Miscellaneous.....25
Ore Dressing.....37
Production.....26, 151
Refining.....20
Government Ownership.....218
Graphite.....111
Production.....151
Gravel.....107
Grinding.....160
Gypsum.....111
Production.....151

H

Handling Coal.....84
Haulage.....83, 130
Headers (see under Drilling).....119
Headworks (see under Hoists).....84
Heat Treatment of Metals.....59, 181
Historical.....219
Hoists and Hoisting.....84, 130
Hydraulic Mining.....134
Hydroelectric.....194
Hydrometallurgy.....188
Hygiene (see under Sanitation).....147

I

Iron and Steel—
Beneficiation of Ores.....56
Chemical and Other Tests.....60
Foundry Practice.....64
Furnaces and Accessories.....57
Iron Ores and Mining.....54
Mechanical and Heat Treatment.....59
Miscellaneous.....66
Plants, Production and Products.....62
Insurance (see under Sociological).....149

K

Kaolin.....111

L

Labor in Mines and Mills.....89, 147
Lamps.....88, 125
Law, Mining.....216
Leaching (see under Hydrometallurgy).188
Lead—
Chemistry.....45
Electricity in Mills.....194
Electricity in Mines.....191
Geology.....46
Metallurgy.....45
Milling Costs.....168
Mines and Mining.....44
Mining Costs.....135
Miscellaneous.....47
Ore Dressing.....45
Production.....151
Refining.....45
Legislation, Mining.....216

Lighting in Mines and Mills.....125
Lignite (see under Coal)..... 79
Lime 106
Lining (Furnace) 187
Locomotives 140
Lubrication (see under Power and Machinery) 191

M

Machinery 191
Magnesite 111
Magnetic Ore Dressing (see under Mills and Milling) 160
Management, Mine 147
Manganese 70
Production 151
Mechanical Coal Cutters 85
Mercury 76
Production 151
Mesothorium 77
Metallography 214
Metallurgy—
Copper 37
Electrochemistry 175
Electrometallurgy 179
General and Miscellaneous 189
Gold 20
Hydrometallurgy 188
Iron and Steel 59
Lead 45
Silver 29
Testing 209
Thermic 181
Tin 73
Zinc 50
Metals and Metal Ores 17
Testing 205
Meters (see under Power and Machinery) 191
Mica 111
Production 151
Mill and Milling—
Accounts 150
Amalgamation 165
Bookkeeping 150
Briquetting 168
Chlorination 168
Concentration 164
Costs 168
Crushing 160
Cyaniding 166
Drying 164
Flotation 162
Electricity 194
Grinding 160
Lighting 125
Miscellany 170
Reduction 160
Sampling 160
Sizing 164
Sorting 164
Testing 209
Washing 164
Mine and Safety Lamps 88
Mine Water 128
Mineralogy 13
Mineral Waters 77
Mines and Mining—
Accidents 144
Accounts 150
Blasting 123
Bookkeeping 150
Boring 119
Cables 141
Conveying and Conveyors 141
Costs 135
Drafting 117
Dredging 132
Drilling 119
Dust 87
Electricity 191
Elevating 141
Excavators 133
Explosives 123
Fire Damp 87
Mines and Mining (continued)—
Handling Coal 84
Haulage 83, 140
Hoists and Hoisting 84, 130
Hydraulicking 134
Labor 147
Lamps 125
Legislation 216
Lighting 125
Law 216
Management 147
Mine Gases 87
Miscellany 136
Motor Trucks 141
Ore Reserves 118
Pillars 124, 129
Power and Machinery 191
Power Shovels 133
Production 151
Promotion 225
Props 124, 129
Prospects and Prospecting 115
Pumps and Pumping 126
Rescue and First-Aid 88
Safety 88, 145
Sampling 122
Sanitation 147
Shafts and Shaft Sinking 124
Signaling 125
Sluicing 134
Sociological 149
Stripping 133
Stoping 137
Storage 143
Stowing 129
Supports 124, 129
Surveying 117
Taxation 216
Telephones 125
Timbers and Timbering 129
Tramways 141
Transportation 140
Trucks, Motor 141
Tunnels and Tunneling 127
Ventilation 128
Water 128
Mineral Production 151
Mineralogy 13
Mining Costs 135
Mining Geology 1
Mining Miscellany 136
Missed Holes (see under Drilling).....119
Molybdenum 70
Monazite 77
Motor Trucks and Tractors.....141
Motors (see under Electricity)..... ..

N

Natural Gas 103
Production 151
Nickel 74
Production 151
Nitrate 111
Non-Ferrous Alloys 68
Non-Metals 79

O

Oil Engines 198
Oils (see Petroleum) 98
Ore Dressing—
Copper 37
Electromagnetic 181
Gold 37
Iron 56
Lead 45
Magnetic 181
Silver 29
Tin 73
Zinc 50
Ore Genesis 11
Ore Reserves 118
Ore Testing 205

Ores and Metals 17
Organization, Business 225
Osmium 64
Overwinding (see under Hoisting)..... 130

P

Paints 111
Peat 96
  Production 151
Petrography 13
Petroleum—
  By-products 101
  Geology 99
  Mining 98
  Miscellaneous 101
  Oil Fields 98
  Pipe Lines 100
  Preparation 100
  Production 102, 151
  Products 101
  Transport 100
  Uses 101
Phosphate 110
Phthisis 147
Pigments 101
Pillar Working 129
Pipe Lines (see under Petroleum)..... 98
Pitchblende (see under Radium)..... 76
Placer Mining and Machinery (see also under Gold) 134
Platinum 33
  Production 151
Pockets and Bins (see under Storage)..143
Potash (see also Salines)..... 112
  Production 151
Power and Machinery—
  Compressed Air 197
  Combustion Engines 198
  Electricity 191
  Gas Producers 200
  Miscellaneous 201
  Steam and Steam Engines 198
  Testing 211
Power Shovels 133
Precious Stones (see Gems)..... 110
Precipitation (see under Cyaniding)....166
Producer Gas 200
Production, Mineral 151
Props, Mine 124, 129
Prospects and Prospecting 115
Pulverizing (see under Reduction)..... 160
Pumice 114
Pumps and Pumping 126
Pyrites 112

Q

Quartz 113
Quicksilver (see Mercury) 76

R

Radio-Actives 76
Radium 76
Reduction 160
Refining (see also under Metallurgy)—
  Copper 37
  Gold 20
  Lead 45
  Petroleum 100
  Silver 29
  Zinc 50
Refractories 187
Rescue Work 88, 147
Reservoirs (see under Petroleum)..... 98
Rock Drilling 119
Rolls (see under Crushing)..... 160
Rotary Pumps (see under Pumps)..... 126

S

Safety in Mines and Mills..... 88, 145
Safety Lamps 88
Salines 113
Sampling 122, 160
Sand 107
Sanitation 147
Schools, Mining 222
Screening Coal 84
Selenium 76
Shafts and Shaft Sinking 124
Shovels, Power 133
Signaling 126
Silver—
  Chemistry 29, 172
  Cyaniding 29, 166
  Electricity in Mills 194
  Electricity in Mines 191
  Geology 30
  Leaching 29
  Metallurgy 29
  Milling Costs 168
  Mine Accounts 150
  Mines and Mining 29
  Mining Costs 135
  Miscellaneous 31
  Ore Dressing 29
  Ore Genesis 11
  Production 32, 151
  Refining 29
Sinking and Driving 124
Sizing 164
Skips (see under Hoisting)..... 130
Slag 213
Slate 108
Slimes (see under Cyanide)..... 166
Sludge 166
Sluicing 134
Smelting—
  Copper 37
  Electrometallurgy 179
  Furnace Practice 181
  Gold 20
  Lead 45
  Silver 29
  Thermic Metallurgy 181
  Tin 73
  Zinc 50
Soapstone 114
Societies, Mining and Metallurgical..... 222
Sociological 149
Sorting 164
Steam and Steam Engines 198
Steels 62
Stone 108
Stoping 137
Storage 143
Stowing 129
Stripping 133
Structurals 104
Sulphur 113
Sulphuric Acid 109
Supports 124, 129
Surveying 117

T

Talc 114
Tailings 213
Tanks (see under Storage)..... 143
Tar 101
Taxation, Mining 216
Technology—
  Chemistry and Assaying 172
  Metallurgy 179
  Mills and Milling 160
  Mines and Mining 113
  Power and Machinery 191
Telephones, Mine 126
Testing 205
Thermic Metallurgy—
  Flue Dust 187
  Fuels and Combustion 186
  Fume 187
  Gas 187
  General 181
  Linings 187
  Refractories 187
  Walls 187
Thickeners (see under Cyaniding)..... 166
Thorium 77

Tile 104
Timbers and Timbering 129
Tin 73
  Production 151
Tipples 84
Titanium 71
Tractors 141
Tramway 141
Transportation—
  Conveyors 141
  Motor Trucks 141
  Rail and Water 140
  Tramways, Cables, etc. 141
Trestles (see under Haulage) 83
Trucks, Motor 141
Tube Mills (see under Crushing) 160
Tungsten 71
  Production 151
Tunnels and Tunneling 127
Turbines (see under Pumps) 126

U

Uranium 72

V

Vanadium 72
Ventilation, Mine 128

W

Wages (see under Labor) 147
Walls (Furnace) and Lining 187
Washing 164
Waste Waters, Disposition 213
Water, Mine 128
Winding (see under Hoisting) 130
Wood Preservation (see under Timber) 129
Workmen's Compensation (see under Labor) 147
Wolfram 78

Z

Zinc—
  Chemistry 50
  Electricity in Mills 194
  Electricity in Mines 191
  Geology 51
  Leaching 50
  Metallurgy 50
  Milling Costs 168
  Mine Accounts 150
  Mines and Mining 48
  Mining Costs 135
  Miscellaneous 51
  Ore Dressing 11, 50
  Production 52, 151
  Reduction 50
  Smelting 50

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